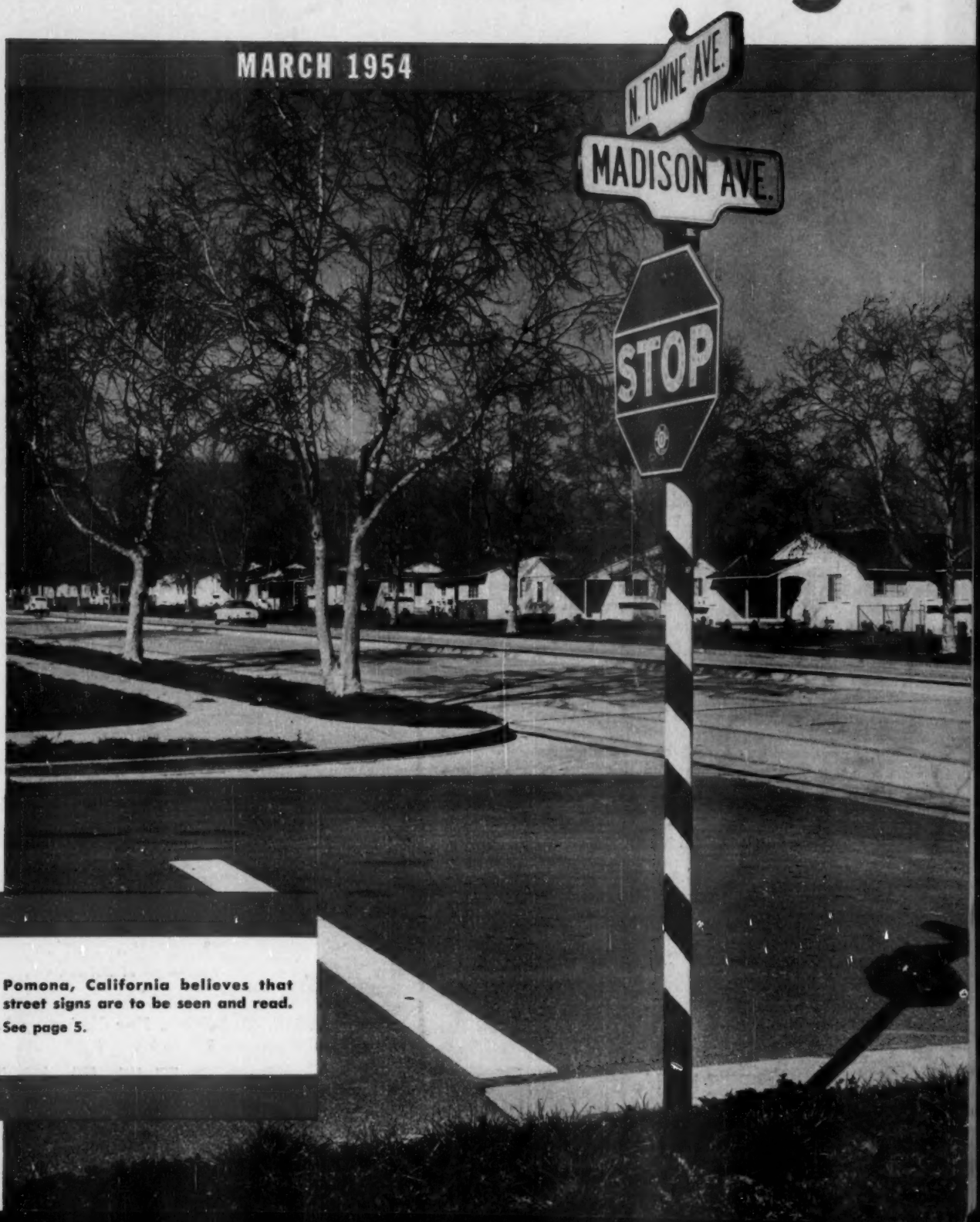
The American City

MARCH 1954



Pomona, California believes that street signs are to be seen and read.

See page 5.

This well-paved, palm-bordered street says:

"Welcome to St. Petersburg, Fla."

Central Avenue, St. Petersburg, Fla.

St. Petersburg, Florida, overlooks nothing which will help attract visitors and permanent residents, including well-paved streets. During the past three years, for example, it has been constructing a modern, heavy-duty pavement on its main thoroughfare, Central Avenue, at the rate of approximately 100,000 sq. yds. each year.

For the most part, the Central Avenue project called for 12 inches of stabilized subgrade, under a base of either limerock or local washed shell 8 to 10 inches thick. A soft grade of Texaco Asphalt was applied to this base by pressure distributor, then covered with small stone and rolled. To complete the pavement, a resilient wearing surface of hot-mix Texaco Asphaltic Concrete was laid to a compacted thickness of 1¼ inches.

One section of the avenue had a worn brick pavement. This was given a hot-mix Texaco Asphaltic Concrete leveling course, spread by motor grader, followed by a two-course Asphaltic Concrete pavement 2¼ inches thick.

St. Petersburg is another of the 1,500 representative U. S. cities served by resilient, heavy-duty Texaco Asphalt paving. Since these cities are scattered from the Atlantic seaboard to the Rockies, their Texaco-paved streets successfully withstand a wide range of traffic and climatic conditions.

Helpful information on all types of Asphalt construction for city streets is supplied in two booklets, which our nearest office will be glad to send you.

Applying a soft grade of Texaco Asphalt to new limestone or shell base. This was covered with small stone and rolled.

Laying the hot-mix Texaco Asphaltic Concrete wearing surface to compacted thickness of 1¼ inches. The W. L. Cobb Construction Company of Decatur, Ga., was the contractor.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG. T. M.

TEXACO ASPHALT

MARCH 1954

The American City

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A four-year-old child was up on a roof

A dog was caught in a fence

A boy was playing with sticks of dynamite

A plumber was needed in a hurry

A baby was about to be born

A house was on fire

Just a few of the emergency calls handled recently by one telephone central office.

The Spirit of Service

Calls like these are familiar to telephone people everywhere. We know them well.

What they say so plainly is that our work lies at the very heart of life. We are in the thick of it. And the way we act matters.

For day in and day out, minute by minute, we are serving the needs of the people. Our entire business —everything about it—exists in order that we may render service.

Out of this experience comes a certain attitude of telephone people that is one of our most precious assets. It is The Spirit of Service.

It begins with a sense of responsibility and shows itself in a sort of combination of knowing-how and wanting-to-do.

We know that without it there would still be telephone service of a sort. But it wouldn't be the same. And we wouldn't be the same people either. For the spirit that brings the most to the job, likewise returns the most to the people who give it.

Much has been done. But telephone men and women know that all that the years have brought is but the beginning.

Our opportunities for Service open wide before us.

BELL TELEPHONE SYSTEM

LOCAL *to serve the community.* NATIONWIDE *to serve the nation.*

Our Municipal Notebook

Meeting These Needs Will Help Stabilize Prosperity

ARRAYS OF FACTS—many of them of importance to municipal officials—that point to opportunities for sustained and heightened prosperity were presented to more than 200 industrial and communications leaders, on January 12, at the 10th annual Washington Conference of the Advertising Council.

In a talk by William C. McKeehan, Jr., Vice-President, J. Walter Thompson Company, seven of the pressing needs that confront our economy were listed as follows:

1. Our school facilities ought to be almost doubled in the next few years.
2. We need more highways and better highways.
3. We must rebuild or remodel the great majority of our dwellings.
4. We must rebuild many of our cities.
5. We need to expand our entire voluntary hospital system.
6. We must modernize much of industry.
7. We need to increase our output of electrical energy by 250%.

"To meet these obvious needs," said Mr. McKeehan, "we have the opportunity to provide over $500,000,000,000 worth of goods and services at today's prices. This is how it breaks down:

"Schools and hospitals, $40,000,000,000; Highway, $60,000,000,000; Housing, $100,000,000,000. Durable equipment and nonresidential construction, $300,000,000,000.

"Add them up, and we get $500,000,000,000 in these fields alone, which do not include many other major fields such as electric power, farm equipment, etc.

"All of this adds up to just one thing. Another Modern Miracle is taking place in America. Another Big Change is happening right here and now.

"We of the Joint Committee (made up from the Association of National Advertisers and the American Association of Advertising Agencies) feel that it is of the utmost important to tell this story to every man and woman in America."

Pomona, Calif., Installs New Street Signs

AFTER NEARLY TWO YEARS of testing street signs for legibility, durability, and economy, the City of Pomona, Calif., made its selection. The large-sized, baked-enamel signs that have been selected have white backgrounds, 4-inch black letters in U. S. standard design, and detachable block numeral plates at the base. There are 717 of these modern signs in use throughout Pomona.

Made by the Grote Manufacturing Company of Bellevue, Ky., they are installed on all the street corners entering upon major north-south and east-west highways as well as along traffic arteries of similar importance. They are being installed on all intersections.

Sampling of Pomona, Calif., program of phonetically screened street names.

All street names have been painstakingly checked to make certain there is no close similarity in sound that might cause an address to be misunderstood. This is vital in times of emergency when police or firemen receive an anxious cry for help.

The signs were financed in part

THE AMERICAN CITY

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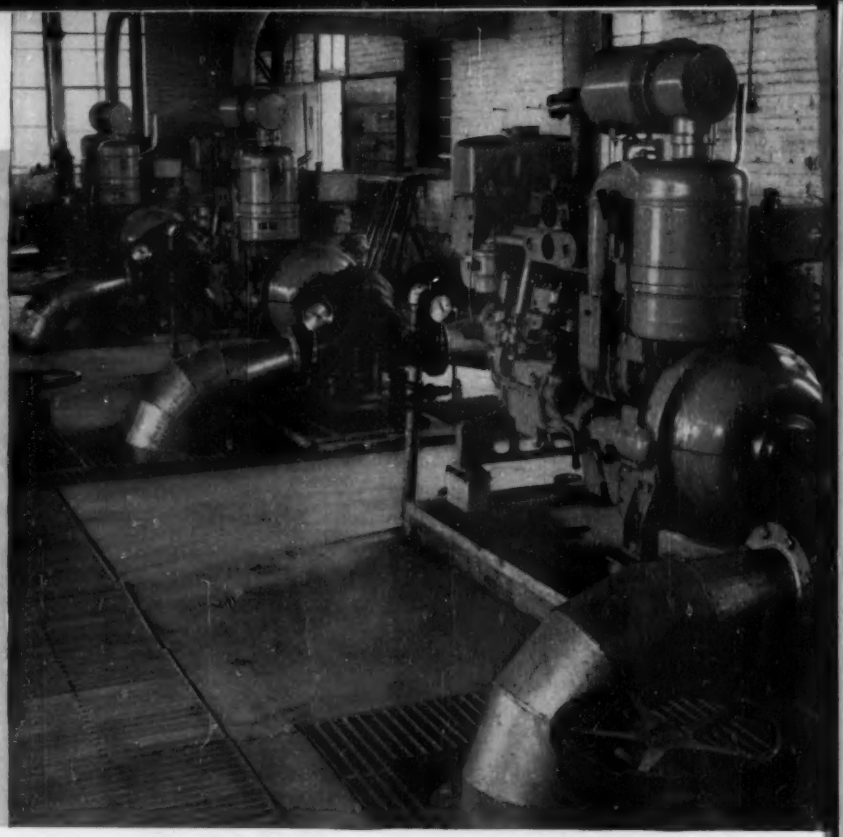
People sleep soundly in Pueblo



...thanks to CAT* standby power

Pueblo, Colorado, may need power in a hurry some day. If it does, nobody's worrying about the water supply. That's protected by the most reliable standby power available—Caterpillar power. Three D337 Engines, in the Public Water Works plant, District No. 2, are ready to swing into action to keep the 2350-gallon-per-minute 8" x 8" pumps running!

Why did Pueblo install Caterpillar Diesels? Here's the answer from Superintendent Fred B. Dunlap: "We had evidence of Caterpillar dependability in our D2 Tractor, which we've used for a long time. And the D337s fitted our specifications exactly, so we bought them."

Performance records in municipal plants all over the country back up Mr. Dunlap's judgment. Besides reliability, these rugged yellow units offer many other advantages. For example: Easy, low-cost installation. They take up little space and don't require big concrete bases or expensive wall or overhead construction. Easy to operate and maintain, they don't need the attention of high-salaried personnel. And they burn low-cost No. 2 furnace oil without fouling—another saving. What's more, they're *honestly* rated. The power they promise in the specification sheets is the working power you can count on in your plant!

What are your needs? You'll find exactly the right unit, or combination of units, in the Caterpillar line —engines and electric sets in 12 sizes up to 500 HP and 315 KW. Your local Caterpillar Dealer is a source of prompt service any time of the day or night. Ask him to show you proof of performance!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

CAT POWER
MEANS DEPENDABLE
PERFORMANCE

from funds made available for this specific purpose by state gasoline taxes, and from general fund appropriations. Contemporary subdivision requirements call for the placement of signs along all new streets with the subdivider handling all expenses involved. Savings of approximately $10 per installation were effected through attaching these signs to boulevard stop-sign posts already erected.

FREDERICK W. SHARP
Administrative Officer
Pomona, Calif.

Trips, Tours, and Package Tours

THIS IS THE TITLE of the monthly tip sheet, "Recreation Program Aids," issued in January 1954 by the Recreation Program Service of the National Recreation Association Defense Services.*

The bulletin points out that many recreation departments have used "Trips and Tours" in a small way—such as an all-day trip by bus to a zoo, or a special trip by bus or train to a big league ball game, or a special bus trip to a theater or concert. However, the National Recreation Association believes that the services of organizing tours, which can be as simple or as elaborate as necessary, can be of great help for families of service men, new families in housing developments, and defense industries, as well as families in the community. Families can be together, yet have the fun of being part of a group, meeting new people—and going to places they may have *wanted* to visit, but never did.

The bulletin, which offers a number of helpful suggestions on the subject, declares:

"We know of no recreation department that has used this deep interest in going 'places' as a real motivation for a planned program of trips, tours, and package tours. Yet it offers an excellent and much-needed service, as valuable as the other 'extra' services departments give in lending picnic equipment, sending leaders out to conduct socials and parties, and supplying a consultation service for individuals and groups planning special events like parties, picnics, etc."

* The address of the NRADS is 315 Fourth Avenue, New York 10, N. Y.

City-County Combine to Finance and Maintain City Hall

AN UNUSUAL city-county agreement for the joint financing and occupation of a new $257,000 City Hall in Petaluma, Calif., was concluded on January 12 by Mayor Vincent J. Schoeningh for the City of Petaluma, and James Lyttle, chairman of the Sonoma County Board of Supervisors. City Manager Edward Frank has reported that construction will start in April.

The city will put up 78% of the cost of the building and site, estimated at $329,880; the county, 22%. The city-county division of costs is based upon the area of the new building each jurisdiction will use, with city offices to occupy 10,098 square feet, and county offices, 2,880.

The county facilities and personnel will include the Petaluma Justice Court, judge's chambers, the court clerk, the district attorney, the constable, the county health office, the county assessor, the social service department, and the county agricultural commissioner.

The agreement provides that the city can add to the building at its own cost, but the county cannot. It provides that when and if the county moves out the city will pay the county 22% of the "fair and reasonable" value of the building and land covered by the agreement. The city is made the agent in awarding the construction contract and seeing the project to completion.

The new city hall will be erected on the grounds of a projected Petaluma civic center for which a municipal auditorium also is planned. It will replace a city hall built in 1886.

The city's share of the cost comes from a bond issue authorized by Petaluma voters in 1945, but it was not until the arrival of City Manager Frank two years ago that steps were taken to set up the agreement for occupancy by the city and county.

Income Tax Figures Given for 10 Cities

MORE CITIES have been looking toward the municipal income payroll tax as a way to help solve nettlesome financial problems, the American Municipal Association relates.

Latest reports cited by the association show such taxes in use in 284 Pennsylvania communities, including 11 cities, 73 boroughs, and 200 school districts.

In Ohio, the tax was being used by Columbus, Dayton, Maumee, Springfield, Toledo, Youngstown, and Warren. Louisville, Ky., has an occupational tax that is like a municipal income tax. St. Louis, Mo., is seeking renewal of authority to continue its tax which will expire April 1. Other cities have such taxes under consideration.

In light of the interest in the income tax for municipal revenue, the association compiled from original sources the current figures on the rate and yield of the tax for 10 selected cities. The information gathered is summarized in the table shown below.

In explanation of the figures for St. Louis, the association pointed out that no complete year is available for that city's tax since 1950, when the per capita yield was $7.08. The association arrived at the figure of $5,949,384 for St. Louis by taking collections of $6,940,950 reported from September 1, 1952, to December 7, 1953, assuming this was a 14-month period, and reducing this to a 12-month basis.

City	*Population (1950)*	*Rate*	*Yield for Year*	*Year Ending*	*Per Capita Yield*
Philadelphia, Pa.	2,071,605	1%	$45,624,395	Dec. 31, '52	$22.02
Scranton, Pa.	125,536	½%	652,225	"	5.19
St. Louis, Mo.	856,796	½%	5,949,384	(see below)	6.94
Louisville, Ky.	369,129	1%	4,459,589	June 30, '52	12.08
Columbus, Ohio	375,901	½%	4,041,694	Dec. 31, '52	10.75
Dayton, Ohio	243,872	½%	4,142,714	"	16.95
Springfield, Ohio	78,508	6/10%	1,843,457	"	23.48
Toledo, Ohio	303,616	1%	8,573,388	"	28.24
Youngstown, Ohio	168,330	½%	1,924,435	"	11.55
Warren, Ohio	49,856	½%	182,357	"	3.66

Price Pressure Pipe meets *every one* of the "Big 3" requirements for an ideal water supply line: *long life, great strength and sustained high carrying capacity.*

Many cities have learned this.

Typical are:

Louisville, Ky.
Cleveland, Ohio
Miami, Fla.
Rochester, N. Y.
Dayton, Ohio
Saginaw, Mich.

Now some of the nation's biggest industries are picking Price Pipe for their own water systems. One of the nation's famous soup companies just installed 7,000 feet of 20-inch Price Pipe at their Ohio plant. In Cincinnati, the Southwestern Ohio Water Company (operated by Mill Creek Industries) is using 19 miles of Price Pipe.

In Louisville, the pressure sewer system for a leading automobile manufacturer includes 16, 20, 24, 30, 36, 42 and 48 inch Price Pipe.

Study the advantages of Price Pipe for any type of water supply or pressure sewer line. Phone or write for all the facts today.

Price Brothers Company

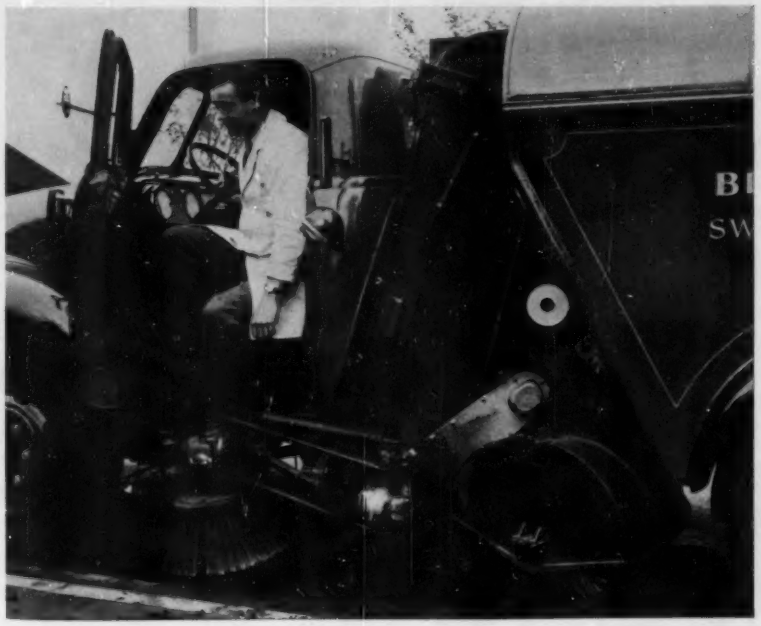
1806 East Monument Ave. • Dayton 1, Ohio

Concrete Pressure Pipe for Water Supply Subaqueous, Pressure Sewer and Culvert Installations

British Sweeper

THIS AUTOMATIC street sweeper—the Bedford Lacre Sweeper-Collector—is now being used in British cities. Mounted on a standard Bedford 4-ton, short-wheelbase chassis and cab, it has a wire gutter broom which drives debris toward the path of the main brush and to an elevating conveyor that empties into a 4-yard receiving hopper. This capacity is intended to accommodate lightweight, bulky debris such as leaves. The hopper empties by tipping in the manner of a dump truck. A 180-gallon water tank is carried for spraying ahead of the sweeper.

Chassis and cab are made by Vauxhall Motors Ltd., Luton, England (the British Division of General Motors Overseas Operation); body and equipment by Lacre Lorries Ltd., Welwyn Garden City, England.

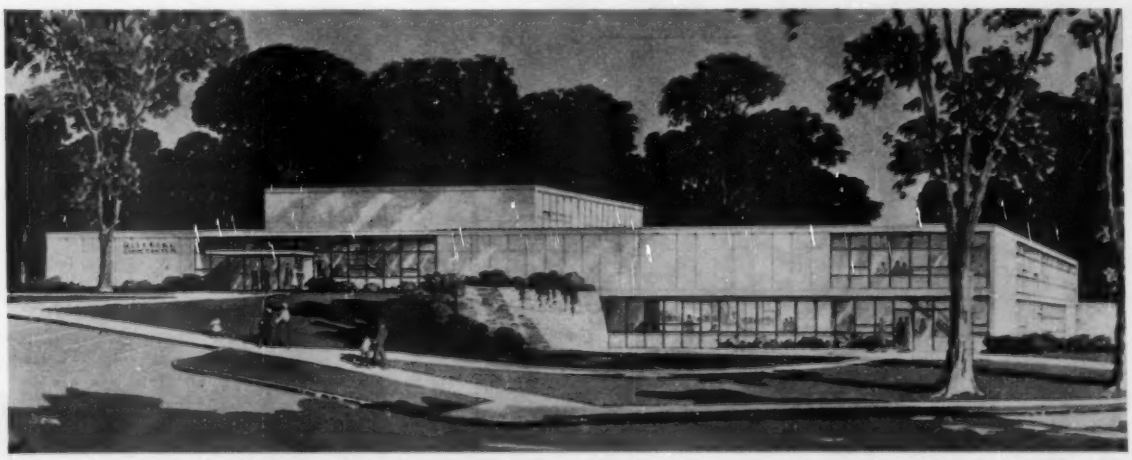


Public Buildings Cited for Good Design

THE DESIGNS for 11 public buildings in eight states have won awards in an architectural-design competition conducted by *Progressive Architecture*, national architectural magazine. The honors were presented at an awards banquet held in Boston on January 22 under the auspices of the Massachusetts State Association of Architects and the Boston Society of Architects.

Among the winners of the more than 600 designs submitted were the following: the Boston Back Bay Center Project, a $75,000,000 plan for the redevelopment of an entire section of Boston; the proposed Civic Auditorium and Amphitheater for the Lower Hill Cultural Center of Urban Redevelopment Area No. 3 in Pittsburgh; a proposed civic center in Hillside, N. J.; the central library in San Bernardino, Calif.; Saint Louis County district courthouse in Hibbing, Minn., and a neighborhood recreation center in Philadelphia.

Judges for the competition were Architects Victor Gruen, George Howe, and Eero Saarinin, and Engineer Fred N. Severud. The *Progressive Architecture* competition is unique in that it is based on designs in progress rather than of completed buildings. Sketches and plans of the projects are featured in the January issue of the magazine.



An award was received by E. A. Schmidlin, East Orange architect, for his design of the proposed Civic Center in Hillside, N. J.

"American Water Meters protected our investment by their low maintenance cost"

"**We buy water meters** as a 30-year investment. Naturally we want to protect our investment by keeping our meters in the best possible condition at the lowest possible cost. We've found that the exceptional simplicity of AMERICAN METERS has greatly reduced our maintenance expenses. Fully interchangeable parts are always available for AMERICAN METERS. We've found that true in using AMERICAN METERS for the past thirty years.

" On the basis of past performance, our expected cost per thousand gallons measured will be lowest with AMERICAN METERS. That's why we plan on using them for the next thirty years."

• Write for complete information . . . today,

BUFFALO METER CO.

2902 Main Street, Buffalo 14, N. Y.

Fellowships and Courses For Municipal Officials

AN INCREASINGLY wide variety of fellowships and courses is available to municipal officials and others interested in improving their civic and professional abilities. Some examples follow:

Bureau of Highway Traffic, Yale University.—Several fellowships with stipends up to $2,000 each are available for a one-year course of graduate study in traffic engineering, beginning September 20, 1954. Closing date for application is April 1. Write to the Director, at Strathcona Hall, New Haven 11, Conn.

Graduate Program in Public Administration. — Sponsored by the State of New York, Albany. Courses offered by New York University and Syracuse University in cooperation with State University of New York for Master of Public Administration degree. Direct inquiries to: Graduate Program in Public Administration, Law Library, State Education Bldg., Albany, N. Y.

Traffic Court Conferences. — Open to judges, prosecutors, court clerks, and other public officials having traffic-court responsibilities. At Northeastern University in Boston, March 29 to April 2. At University of Alabama, in Tuscaloosa, May 3 to 7.

Accident Investigation Administration and Techniques.—At Northeastern University, Boston, March 22 to April 2. At University of Alabama, Tuscaloosa, April 26 to May 7. A course in Chemical Tests for Intoxication will be offered at Alabama, May 3 to 7. For information on these courses, write to The Traffic Institute, 1704 Judson Ave., Northwestern University, Evanston, Ill.

University of British Columbia, Faculty of Graduate Studies. — A number of fellowships and scholarships are available for qualified students interested in a course in Community and Regional Planning, leading to a Master's Degree. The course is designed to train students for a wide variety of employment opportunities in the growing field of urban and regional planning, and provides facilities and background for research into the planning problems of Western Canada. Deadline for entrance applications is April 20. For further information, write the Secretary, University Committee on Community and Regional Planning, Vancouver 8, B. C.

Wayne University, Public Administration Curriculum.—Six "Lent D. Upson Fellowships" for Graduate Training in Public Administration are available. These carry stipends of $1,800, for 12 months beginning in September 1954, plus graduate tuition, fees, and any rights under G.I. Bills. There is on-the-job training of not less than 1,080 hours in the Citizens Research Council of Michigan. For application blanks, address Loren B. Miller, Executive Director, Citizens Research Council, 810 Farwell Building, Detroit 26, Mich.

School of Business and Public Administration, Cornell University. — At least one $1,000 fellowship and several $500 scholarships for Master's candidate in City Management; Public Personnel Administration, Comparative Public Administration, etc. Applications due March 1. File with Secretary of School, McGraw Hall, Ithaca, N. Y.

Northwestern University School of Business, 360 Huntington Avenue, Boston 15, Mass. New course this Spring on City and Regional Planning, directed by Perry L. Norton, Executive Director, American Institute of Planners.

School in Fine Arts, University of Pennsylvania. — Several fellowships and scholarships with stipends up to $1,200, for graduate study in 1954-1955 in City Planning, Landscape Architecture, and Design. Apply by March 1 to the Dean, Philadelphia 4, Pa.

See also page 15 of the February 1954 issue of THE AMERICAN CITY for information of Harvard University Fellowships.

Think Periods for Municipal Officials?

THINK! is the watchword for numerous organizations, following the admonition of Thomas J. Watson, of the International Business Machines Corporation. But "think periods" are the contribution of Mayor Orville Hubbard of Dearborn, Mich., who issued a new order for city department heads in January.

The order directs them to observe a 30-minute "think period" when reporting at 8 a.m. They "are to shut themselves in their offices, take no phone calls nor see anbody" but "they can jot down any hot ideas." Busy operating city officials across the nation will be watching the experiment with sympathy and interest—and also the taxpayers' reaction.

Detroit and San Francisco Areas Tackle Air-Pollution Problems

TWO APPROACHES to the problem of securing cooperation between communities on air-pollution control are being evolved in the Detroit-Windsor and San Francisco metropolitan areas.

Detroit-Windsor Area

The Detroit-Windsor Regional Association of Air Pollution Control Officials was established in January, to serve an area of 25 miles from the new Detroit and Windsor Civic Centers. At the first meeting were 33 officials representing 10 communities on both sides of the river. More communities have advised that they will participate in the future.

Membership is limited to government officials, including official members of advisory, appeal, and control boards concerned with air-pollution control. The organization will meet regularly to exchange information and ideas, so that laws can be improved, and better techniques developed for getting the air cleaner.

Fred W. Classon, Chief Inspector of Wyandotte, was elected Chairman; Samuel C. Boyle, Air Pollution Director of Windsor, is Vice-Chairman, and Benjamin Linsky, Chief Smoke Inspector of Detroit, is Secretary-Treasurer.

San Francisco Area

In San Francisco, the Bay Area Council appointed Patrick J. Moran as the director of the new Bay Area Voluntary Air Pollution Control Program, with J. J. O'Connell serving as consulting engineer in the initial phase of the program.

The new approach, which will depend on cooperation for its effectiveness, has a three-pronged attack on air pollution: (1) supplying business and individuals with information on the nature of air pollutants; (2) policy and technical advice for correcting air-contaminating operations, and (3) encouraging and publicizing corrective measures taken by industry and communities.

Mr. Moran and Mr. O'Connell will work with health officers and civic and business leaders in the nine Bay Area counties in their efforts to control air pollution.

STOP RUST! with RUST-OLEUM

RUST-OLEUM BEAUTIFIES AS IT PROTECTS — AVAILABLE IN ALL COLORS, ALUMINUM AND WHITE

From water tanks, fences, street lights, machinery and equipment, to water and sewage works plants —your rustable metal surfaces need **RUST-OLEUM'S** decorative protection. The **RUST-OLEUM** formula is *exclusive*—incorporating a specially processed fish oil vehicle that dries right, is odor-free, and penetrates rust to bare metal usually eliminating sand-blasting and other costly surface preparations. **RUST-OLEUM** is available in practically all colors including Aluminum, Blue, Yellow, Gray, Green, Black, Orange, Red and many others. It resists salt water, salt air, heat, sun, fumes, weathering smoke, etc. See Sweets for complete catalog and nearest source of supply, or write for complete information today.

CHECK THESE USES: Tanks, fences, metal sash, parks, playground equipment, city trucks, roofs, stop lights, street lights, fire hydrants, pipes, schools, water and sewage works, parking meters, etc.

See local classified telephone directory under Rust Preventives or Paints for nearest RUST-OLEUM source of supply.

RUST-OLEUM CORPORATION
2513 Oakton St. • Evanston, Ill.

- ☐ Have a Qualified Representative Call.
- ☐ Full Details on FREE Survey.
- ☐ Complete Literature.
- ☐ Nearest RUST-OLEUM Source.

When Town and Gown Get Married

- "GET widespread citizen participation!"
- "Involve lots of citizens in your planning!"
- "Grass rooters have a stake, too, consult them!"
- "Lots of free-wheeling discussion, that's the idea!"

Municipal officials are getting this kind of advice from all sides. But with this 20th century flagellation, the know-how is rarely spelled out. An exception is the report entitled "College-Community Relationships in New York State."

This 100-page document, issued by the New York State Citizens' Council,* contains the findings of a recent study made by the Council at the request of powerful educational forces in that state. The Association of Colleges and Universities of the State of New York, and the State University of New York financed the study and approved the report.

H. Curtis Mial, executive director of the Council, who directed the study, used an effective social invention in the process. He got 5,000 man-hours of effective volunteer effort out of 400 people from 57 educational institutions and nearby communities through the use of visiting and host teams. Twenty-six visiting teams, made up of various college and community people, each put in one and a half days with host teams in as many colleges and univerisities.

Some of the findings of this study are of particular interest to readers of THE AMERICAN CITY. For example, here are a few headings and paragraphs from the report:

CORNELL UNIVERSITY (Ithaca, N. Y.)

Department of City and Regional Planning Studies

"Graduate students are sent into communities to do comprehensive studies in city planning. The local community is expected to provide information and facts. Usually city engineers, newspapermen, aldermen, and citizen organizations participate in fact gathering. Faculty members supervise the work. This practice originated in the department in 1942 and has provided practical experience both for city planning students and for students in sociology and engineering. Each study has proved to stimulate community thought on local problems. The report points out that while the college emphasized the educational purpose of the studies, which are not to be confused with professional work, some communities have accepted the students' work as their master plan.

"The college absorbs the expense of each student, though some communities have insisted in making a donation for expenses. The finished reports are filed and used as reference material. Participating students present their findings to community groups."

By THOMAS L. COTTON
Public Relations Counsel
New York, N. Y.

HOBART COLLEGE (Geneva, N. Y.)

Field Work in Municipal Government

"This particular project was started by the individual professor with some trepidation. Would the community, conservative, homogeneous, and reserved, accept this kind of participation by the college? Would government officials resist what might be called "snooping?" The visiting team recorded what happened:

"Eight students who had developed some contact with downtown people were enrolled in a course in municipal government. They attended all Common Council meetings and were each assigned to a public office. Here they examined the office organization, noted its weaknesses and its strengths, and assisted wherever they could. Each made confidential reports verbally to class meetings. No report was made to local government officials other than informal conversations between students and those they worked with.

"Local officials showed 'considerable enthusiasm in indoctrinating the students with the ways of local government' and regarded this as 'an opportunity to show students the practical instead of the theoretical side of government.' The students were well received and officials interviewed suggested that more students be brought in contact with downtown people. It was felt that this would develop a much better understanding and improved relations between college and town."

UNION COLLEGE (Schenectady, N. Y.)

Bureau of Municipal Research Interns

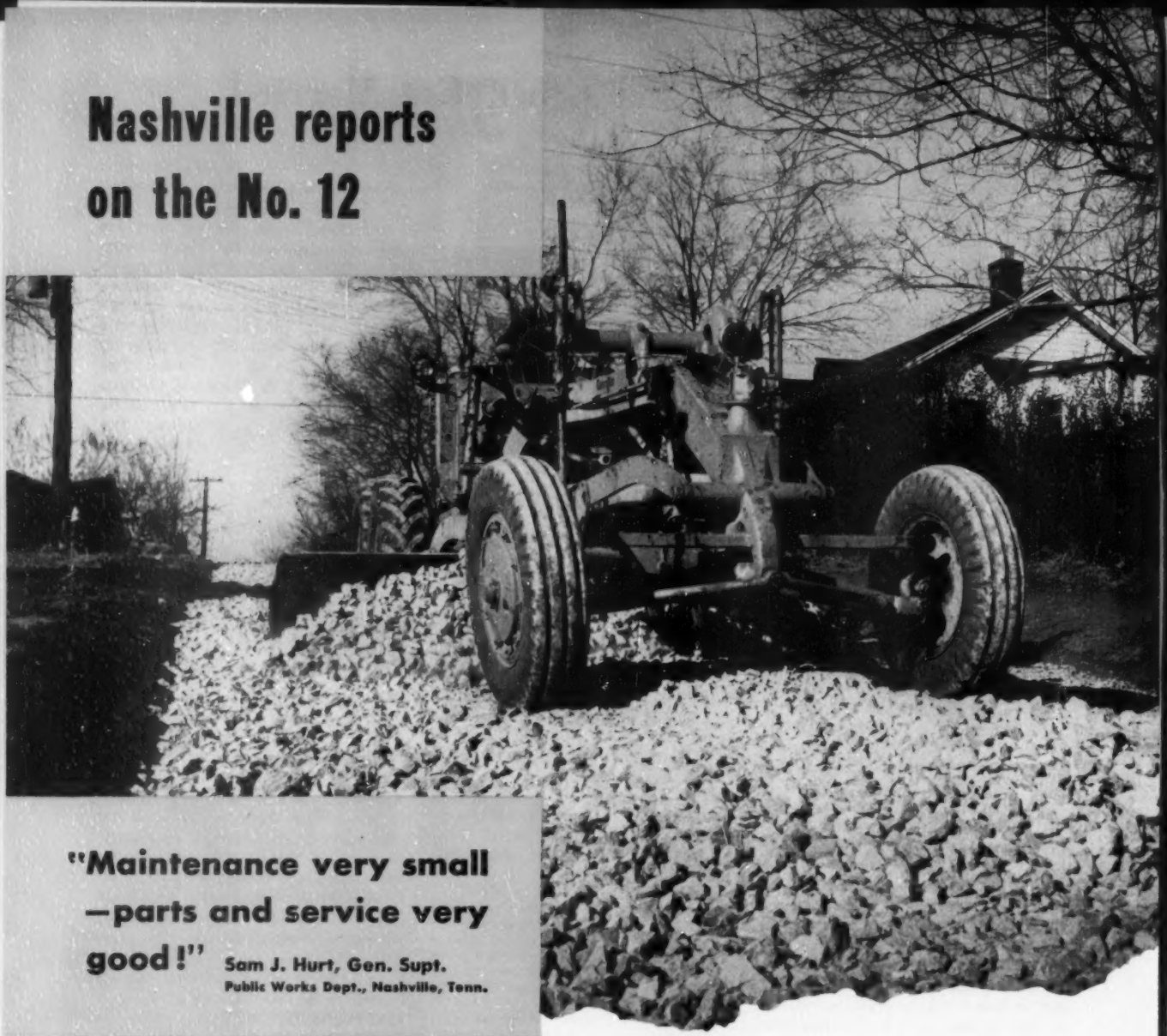
"This is more than an extension of the classroom. The community agency, here the Bureau of Municipal Research, *is* the classroom. The visiting team, noticing that the practice was launched only this fall, termed it 'definitely a plus element potentially.' The practice currently involves two Union College seniors. They are paid $400 per term for 9 to 13 hours of work per week under joint supervision of college faculty members (a sociologist and an engineer) and the Bureau director. Significantly, the students' pay is provided equally by the College and by the Bureau. The students' load is lightened and the work is related to and credited toward academic requirements. The purpose is "to teach students practical aspects of government and also to get work done for the Bureau," and the assumption is clearly that the two aims are compatible. Projects on which the students work are initiated by the director and approved by the Bureau Board and members of the Union faculty. The practice originated through conversations between the director and a Union College faculty member."

From these quotes it is obvious that city fathers can get a lot of help and at the same time push forward practical education for citizenship if there is an institution of higher learning in the community. Also, it is clear that there is no need for city officials to stand on ceremony. It appears that a friendly sincere approach from either side brings effective cooperation, whether or not there is an official department or bureau existing to promote the marriage of "town" and "gown."

In New York State, one of the functions of the Citizens' Council is that of marriage broker. It promotes fruitful relationships between communities and individuals, groups, agencies or enterprises competent to help citizens solve problem-situations. At times, when these marriages go a little sour, the Council becomes a marriage counselor. It is a nonpartisan voluntary organization supported entirely by memberships and contributions. The President of the Council is Dr. Alan Willard Brown, President of Hobart and William Smith Colleges.

* Headquarters, 613 E. Genesee St., Syracuse 2, N. Y.

Nashville reports on the No. 12



"Maintenance very small —parts and service very good!" **Sam J. Hurt, Gen. Supt.**
Public Works Dept., Nashville, Tenn.

NASHVILLE has three Cat® Motor Graders in its equipment line-up. This one is spreading rock on a section of the 405 miles of roads that the city maintains. Mr. Hurt sums up the No. 12s' performance as follows: "They're most satisfactory in keeping our Nashville streets in top-notch condition!"

That observation is based on results. And results are engineered into every rugged yellow motor grader. It's the *only* unit built by *one* manufacturer and serviced by *one* organization. Power, weight and working speeds are *balanced* for maximum work capacity in any gear. As for stamina, here's a significant fact: more than 99% of the Caterpillar Motor Graders ever built are still on the job!

How does the No. 12 handle? Easy, because of constant-mesh transmission. Blade positioning is easy, too—*less than a minute* for many uses without the operator leaving the platform. And visibility is good. Sitting down, the operator has a clear view of the blade and the job. Anti-coast brakes prevent "creeping"—the blade stays where it's put. Add up these and many other advantages and the result is *more* work at *lower* cost with *less* down time than any competitive unit!

That's the kind of performance that stretches budgets, gives taxpayers more distance for their dollars. Ask your Caterpillar Dealer for a demonstration. He's a reliable source of information and service. Call him today.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR®

Parking-Meter Ads in Philadelphia Illegal

PHILADELPHIA is to be congratulated on its escape from two civic skin diseases. It is now curing its rash of advertisements on parking meters and has also taken measures against a threatened eruption of advertisements on ash cans and corner waste baskets.

On October 13, 1952, a city ordinance authorized the placing of advertisements on the parking meters in the city streets, and pursuant thereto the city entered into a contract with the City Meter-Ad Corporation to place, maintain, and charge for such advertisements, for which privilege the city received certain fees.

The advertisements were so disfiguring and aroused so much protest from citizens and businesses that on December 17, 1953, Councilman Paul D'Ortona introduced an ordinance to repeal the ordinance he had originally fathered permitting the advertisements.

Meanwhile, the Chestnut Hill and Mount Airy Businessmen's Asscciation and others had instituted a suit against Mayor Joseph S. Clark, Jr., and Commissioner of Procurement A. Albert Cherashore to have the ordinance permitting the advertisements declared illegal. The City Meter-Ad Corporation, of course, intervened in an effort to sustain the ordinance, and the case was heard by Judge Peter F. Hagan of Common Pleas Court I on September 23, 1953.

Judge Hagan on January 5, 1954, in a 34-page opinion, reviewed the case and held the ordinance authorizing the advertisements on parking meters to be illegal and void. He held such an ordinance to be "a diversion of the public highways of the city to a private use." His decision is summarized below in more detail.

Philadelphia's Second Escape

Philadelphia's second escape involves the question of advertisements on corner receptacles for litter, which now carry a narrow band with a public anti-litter slogan. Last autumn Toronto's use of advertisements on its corner litter cans led to the suggestion that Philadelphia might earn a little money by renting out a similar privilege. Paul MacMurray, then street commissioner, disapproved, saying it would be even worse than the advertisements on the parking meters, and that the esthetics involved were worth more to the city than the earnings involved.

In view of Judge Hagan's decision concerning advertisements on parking meters, it is obvious that advertisements on corner litter receptacles would likewise be illegal. But it may be added that the new Street Commissioner, Henry D. Harral, who was formerly Deputy Commissioner, is in thorough accord with his predecessor's disapproval of using public property for private advertising, whether legal or illegal.

Judge Hagan's Opinion

Judge Hagan's long opinion cites useful authorities both in Pennsylvania and elsewhere. The following is a fairly complete summary of the points of his decision:

1. Neither the State of Pennsylvania nor the City of Philadelphia (under delegated power) may grant a franchise to a private corporation permitting it to make a private use of the sidewalks of the public highways where the ownership of the fee in the sidewalks is in the abutting owners who have not consented to such use of the sidewalk and have received no compensation therefor.

2. Advertisements on parking meters (a device to regulate street traffic and street use, not to raise money for the city) would be an extension of the use for which the meters are erected and an additional burden upon the abutting landowners, who own to the middle of the street subject to *public* use of the street, but not subject to *private* use. This new servitude cannot be imposed upon them, certainly not without compensation.

3. Any use of the public highways either by the state or by any political subdivision, must be for public purposes, whether done directly or through the device of a license or franchise.

4. The ordinance is illegal because its object is to serve a private rather than a public purpose. "We, therefore, hold that it was a diversion of the public highways of the city to a private use when the City of Philadelphia by ordinance granted a franchise to the intervening defendant (City Meter-Ad Corporation) permitting it to use the sidewalks of the premises owned by plaintiffs for the purpose of promoting the business of private advertising."

5. The fact that the city owns the parking meters does not permit it to add advertisements as merely an "incidental use." The legal use of the meters is limited to their metering function as a traffic regulation. The city has no right to extend their use as against abutting owners who own to the center of the street.

6. The same illegality would apply to advertisements affixed to fire plugs, fire-alarm boxes, police call boxes, traffic-light standards, and other apparatus maintained by the city in the streets.

7. The ordinance permitting the renting out to the Meter-Ad Corporation the privilege of affixing advertisements to parking meters deprives abutting owners of their property without due process of law.

8. Such a use of parking meters is not a street use.

For the foregoing reasons, Judge Hagan declared the ordinance ultra vires, illegal and void.

To date the only available citation for Judge Hagan's opinion is *Chestnut Hill and Mt. Airy Businessmen's Association et al.* vs. *City of Philadelphia et al.*, Vol. 130 The (Philadelphia) Legal Intelligencer, p. 45 (January 13, 1954). Unless appealed and the case is reported in the Pennsylvania Superior or Supreme Court Reports, Judge Hagan's opinion will be published at a later date in the District and County Reports.

ALBERT S. BARD
Counsel
National Roadside Council

Fewer New Nonproperty Taxes in 1953

THE YEAR 1953 was termed one of the quietest for municipal revenues since the end of World War II—insofar as new levies of nonproperty taxes were concerned.

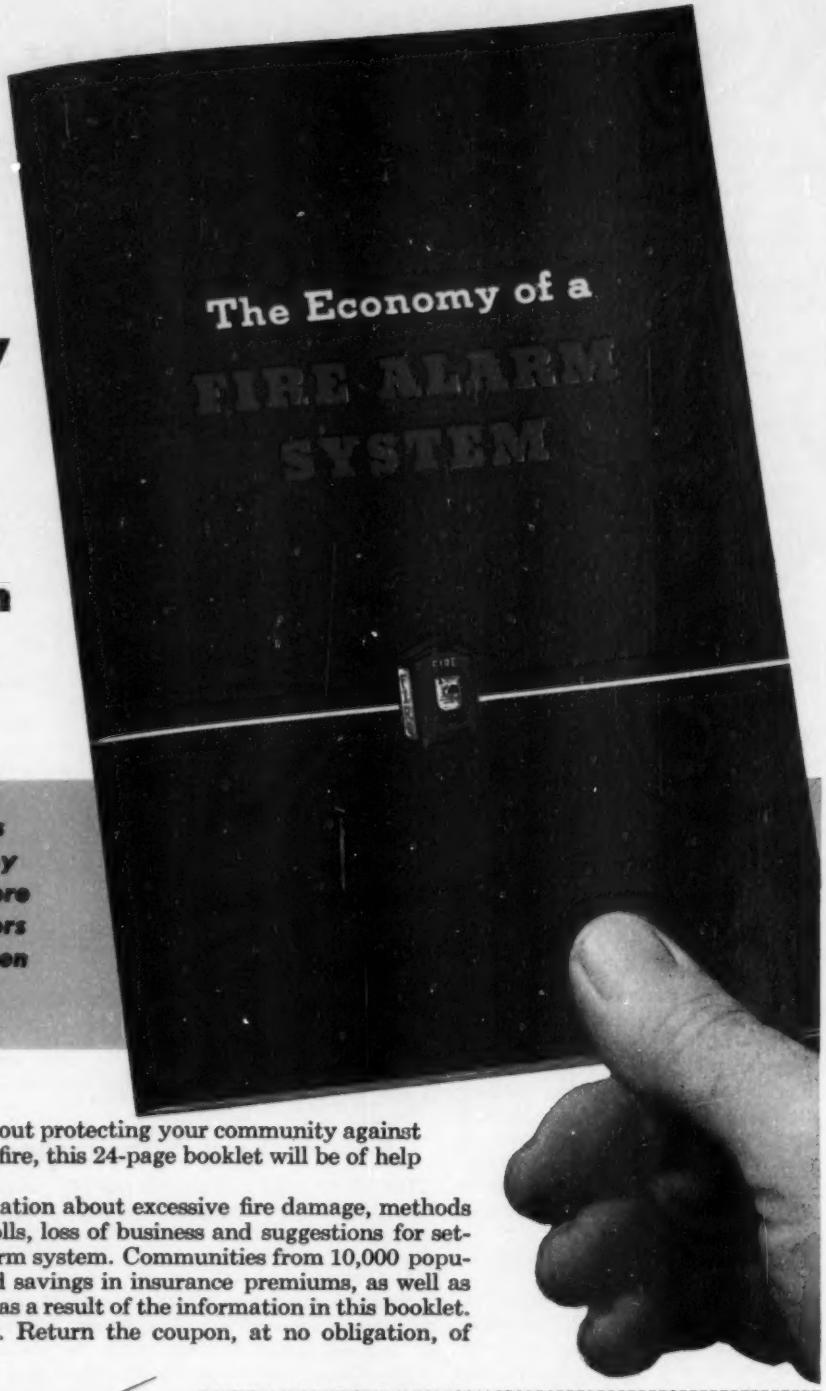
That judgment came from the Municipal Finance Officers Association in its roundup of city tax news in 1953. The association also noted that increased rates for old municipal taxes were not too common.

The chief new nonproperty tax levy for cities came in Illinois where the legislature gave them permission to tax cigarettes. Chicago adopted a tax of one cent per pack. But its legality was immediately challenged. Although the city collects the tax, receipts are put in a special fund pending a court decision in the case.

Otherwise, adoptions of new revenue measures were sporadic, the association said. For example: Maumee, Ohio, adopted a 1% payroll income tax which took effect January 1, 1953. Sillery, Que., imposed a 2% business tax on the value of the premises as carried on the taxable property roll. Moultrie, Ga., authorized parking-meter advertising. Park Ridge, Ill., imposed a sewer-service charge based on water consumption. And Philadelphia, Pa., levied a three-mill mercantile tax.

Among the cities to increase existing service charges, the association took note of these: Columbus, Ohio, which doubled its sewer-service charge; Norfolk, Va., which raised its rate for electrical inspections; Fort Pierce, Fla., which increased its rate for garbage and trash removal; and Red Deer, Alberta, Canada, which raised its water-service charge.

How necessary is an adequate Fire Alarm System?



Answers Questions that may be asked by Average Citizens • Store Owners • Manufacturers Bankers • Insurance Men City Officials

Whatever your thoughts about protecting your community against loss of life and property by fire, this 24-page booklet will be of help to you.

In it you will find information about excessive fire damage, methods for preventing loss of payrolls, loss of business and suggestions for setting up an adequate fire alarm system. Communities from 10,000 population and up have received savings in insurance premiums, as well as reductions in property loss, as a result of the information in this booklet. Send for your copy today. Return the coupon, at no obligation, of course.

GAMEWELL®

THE BOX IS POSITIVE

Reduces Human Error

There is no substitute for the Municipal Fire Alarm System

THE GAMEWELL COMPANY, DEPT. FE
NEWTON UPPER FALLS 64, MASS.

Please send my copy of "The Economy of a Fire Alarm System", at no obligation.

Name.....*Title*.....

Address.....

.....

City.....*Zone*....*State*.....

Chattanooga's New Fire-Alarm System

A COMMITTEE OF ENGINEERS for the purpose of formulating plans for and supervising the construction of the new Class "A" fire-alarm system was appointed by the City Commission. The National Board of Underwriters, on reviewing the fire-fighting system of Chattanooga, Tenn., felt that a new and up-to-date alarm system was needed if a raise in fire insurance rates was not to be imposed.

Three Power Supplies

This new $500,000 fire-alarm system originates at the Fire Alarm Headquarters Building and is capable of being energized from three different sources of power. The Power Board furnishes the main source of power from its underground network system which is changed by means of a rectifier to 60 volts dc.

This rectifier not only energizes the fire-alarm circuits but also furnishes the charging current for the station battery, which is the second source of power. The third source of power is a diesel engine connected to a dc generator. This engine is unique in that it is powered by natural gas.

177 Miles of Wire

From this building the 20 alarm circuits, station circuits, and telephone circuits fan out underground to all parts of the city, using 17 miles of multiconductor underground cable, 4 miles of multiconductor aerial cable, and 9 miles of single-conductor underground wire to reach the various riser poles.

From these riser poles 147 miles of live wire carry the circuits to the various alarm boxes, which are so laid out that from any given point one need go no more than two blocks in either direction to find an alarm box. A total of 455 alarm boxes have been installed together with 44 auxiliary boxes for schools and public buildings.

This addition to our fire-alarm box system should make some impact on our people and lead to a larger proportion of box alarms.

FRED DATRES
Electric Power Board of Chattanooga
Chattanooga, Tenn.

Chattanooga's fire-alarm headquarters, the equipment for which was manufactured by The Gamewell Company, is manned by operators who are in instant touch with all the city's 455 fire-alarm boxes, its 44 auxiliary boxes, and its many fire houses.

Monterey Wins Fire Insurance Rate Cut

THE City of Monterey, Calif., has been graded National Board Class 3 by the Pacific Fire Rating Bureau, from previous gradings in several zones, ranging from Class 7 to Class 5.

The gain was due to a cooperative effort by the citizens, the city administration, and the California Water and Telephone Company.

The citizens, in 1950, voted a bond issue of $200,000 for two fire stations and two 1,250-gallon pumping engines. The California Water and Telephone Company increased its main sizes to the high-value area.

The city administration authorized installation of two-way radios on all equipment, with a communications center to serve the fire department and all other city departments; adopted a fire-prevention ordinance and established a Bureau of Fire Prevention; extended the fire zones under the Uniform Building Code; reconstructed the fire-alarm systems, and added 100 new fire hydrants.

The Monterey Insurance Agents Association supplied these figures on the savings effected for a $10,000 dwelling in the three areas of the city formerly rated National Board Class 5, 6, and 7, respectively.

		3-Year Premium
Class 5 to Class 3		
Composition roof	× .375 =	$37.50 old
	× .325 =	32.50 new
		$ 5.00 saving
Shingle roof	× .425 =	$42.50 old
	× .375 =	37.50 new
		$ 5.00 saving
Class 6 to Class 3		
Composition roof	× .425 =	$42.50 old
	× .325 =	32.50 new
		$10.00 saving
Shingle roof	× .50 =	$50.00 old
	× .375 =	37.50 new
		$12.50 saving
Class 7 to Class 3		
Composition roof	× .50 =	$50.00 old
	× .325 =	32.50 new
		$17.50 saving
Shingle roof	× .575 =	$57.50 old
	× .375 =	37.50 new
		$20.00 saving

WALTER HAHN, JR.
City Manager

BEELINE BRAND Reflective Compound ends long traffic tie-ups!

FAST-DRYING, ***Beeline Compound exceeds the most rigid durability requirements. Apply with standard equipment.*** **Flows on smoothly, easily. Try 100 gallons and see for yourself — order from your regular supplier.**

PREMIXED BEELINE BRAND
REFLECTIVE STRIPING COMPOUND
Made by the makers of "Centerlite" Reflective Compound

3M COMPANY

Made in U.S.A. by Minnesota Mining and Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

Indianapolis Tries "Joint Prevention"

WHEN THE RUNWAYS at Indianapolis' Weir Cook municipal airport were resurfaced last summer, the asphalt covering the transverse joints in the concrete base was strengthened by a 5-foot strip of wire fabric.

Welded wire fabric was placed over most of the existing expansion joints of over 2,500 feet of the heavily used main runway. Some of the asphalt above the joints was not reinforced to serve as a control to determine the effectiveness of the mesh.

The runway was paved originally in 1931 with a 6-inch-thick portland-cement concrete surfacing. It had not failed nor suffered more than some surface spalling.

The new surfacing consisted of a 1¼-inch-thick first course of hot-mix asphalt; a second wearing course, also 1¼ inches thick; and a seal coat of cutback asphalt applied at the rate of 0.2 of a gallon per square yard. Limestone chips were then spread at the rate of 15 pounds per square yard. The chips were heated to 215° F. for better adhesion.

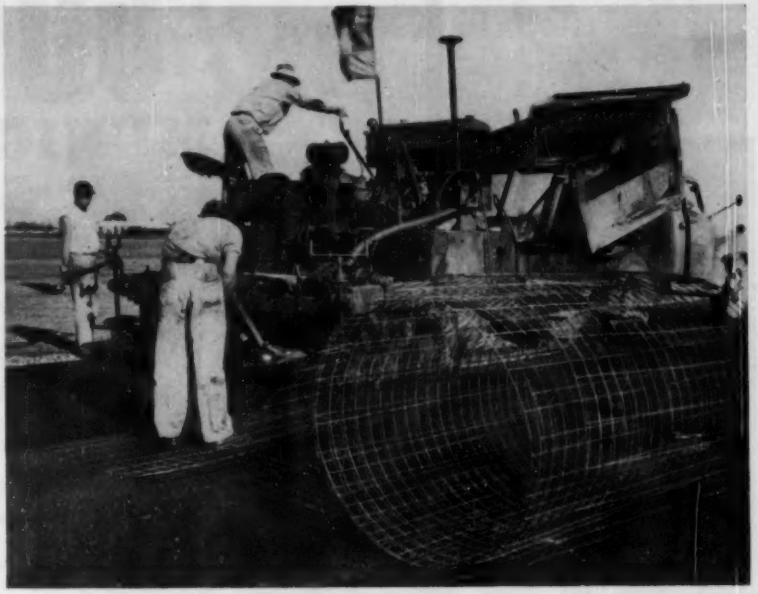
The material in the hot mix followed these general specifications:

Aggregate	*Percentage*
Coarse	65–75
Fine	25–35
Bitumen	4– 6

The bitumen was an asphalt emulsion and its content was based on weight, exclusive of water or solvent. All aggregates were coated with asphalt before being used to provide a more dense surfacing and to eliminate fatty spots.

The welded-wire fabric was placed between two layers over the transverse joints. Initial inspection of the control runway has shown that cracks are already forming over the transverse joints not reinforced by the fabric. Furthermore, no shrinkage cracks appeared over the reinforced joints, even after several days of near zero weather.

The pavement resurfacing is part of the airport's expansion program which includes a new terminal building and is directed by Airport Manager P. H. Roettger. The joint-prevention details were developed cooperatively by Mr. Roettger and representatives of the Wire Reinforcement Institute, Washington 4, D. C.



A Barber-Greene paver spreads a second course of hot-mix asphalt over the wire mesh covering transverse joints. Worker (foreground) stands on fabric to keep it flat.

Beer Cans Used As Markers

DISCARDED BEER CANS, wrapped with reflective tape and mounted on wooden stakes along the taxiways can offer considerable safety to night-taxiing planes. This device has been used successfully at the Westchester County Airport in White Plains, N. Y., according to Robert W. Gallaway, manager.

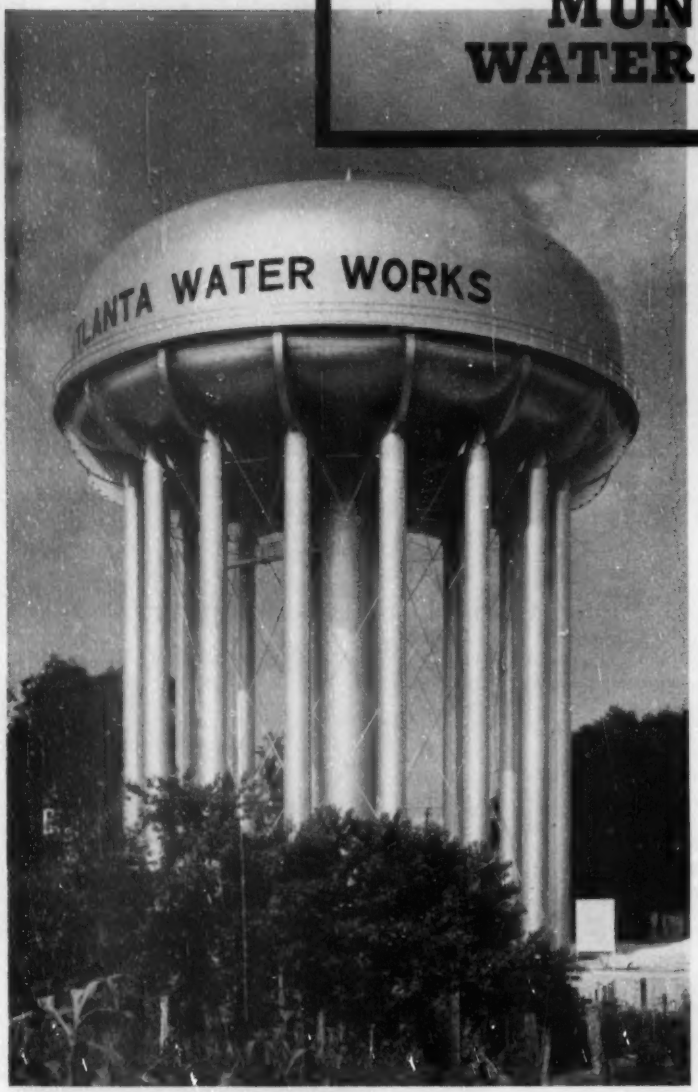
The reflective Scotchlite tape is applied in two white bands, 2 inches wide, with a ½-inch red center strip. Stakes, 30 inches long, are driven 8 inches into the ground and may be easily withdrawn for grass cutting or snow plowing. The stakes are painted International Orange for maximum daytime marking and to preserve the wood. Spacing is about 100 feet on the straight runs and about 20 feet on the curves.

Gene Graciano, superintendent of operations, who devised the markers, claims that they reflect the landing lights of a taxiing plane from almost any angle. He reports that the markers cost only 30 cents each to build compared with the conventional reflective taxiway markers which sell for about $5. The tape is a product of the Minnesota Mining and Manufacturing Company of Minneapolis, Minn.

Beer cans, which have been wrapped in reflective tape, serve as taxiway markers at Westchester (N. Y.) County Airport.

GOOD MUNICIPAL WATER SERVICE

doesn't just happen!



It takes foresight, planning and action to meet the municipal water needs of a growing city. Few cities are more aware of this than Atlanta, Georgia, where a $10,000,000 expansion program was launched several years ago to keep abreast of the city's growing water needs.

The 2,000,000 gallon Horton® elevated tank shown at the left was installed as one of the first steps in Atlanta's program. Erected as the result of a load study, the elevated tank helps level off peaks and valleys in pumping operations and assures the city of a greater overall water supply available at all times for domestic needs, industrial use and fire protection.

Horton radial-cone bottom elevated tanks of the type installed at Atlanta are built in standard capacities from 500,000 to 3,000,000 gallons. Where smaller capacities are needed, Horton elevated tanks are built in standard capacities from 15,000 to 500,000 gallons with ellipsoidal-bottoms. Write our nearest office for an estimate or quotation on a Horton elevated tank to help your system meet growing water needs.

HORTON

WELDED STEEL

STORAGE TANKS

CHICAGO BRIDGE & IRON COMPANY

Plants in Birmingham, Chicago, Salt Lake City, and Greenville, Pa.

Atlanta 3	2114 Healey Bldg.	Los Angeles 17	1503 General Petroleum Bldg.
Birmingham 1	1502 North Fiftieth St.	New York 6	3308—165 Broadway Bldg.
Boston 10	1002—201 Devonshire St.	Philadelphia 3	1616—1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg.	Pittsburgh 19	3202 Alcoa Bldg.
Cleveland 15	2236 Midland Bldg.	Salt Lake City 4	501 West 17th South St.
Detroit 26	1501 Lafayette Bldg.	San Francisco 4	1533—200 Bush St.
Havana	402 Abreu Bldg.	Seattle 1	1301 Henry Bldg.
Houston 2	2101 C & I Life Bldg.	Tulsa 3	1625 Hunt Bldg.

You Can't Get Good Water Out of Mud Balls

MUD MAY HAVE its place in beauty salons as a facial pack, but it doesn't work well in a water filter. Tuscaloosa's Water Superintendent, C. S. Read, found a bumper crop of mud balls and cracks in the sand beds that were throttling filter runs to less than 24 hours between washings. At that time, the plant had 12 filters, each rated at 0.5 mgd (million gallons daily). The problem was not only one of getting the mud balls out of the sand beds, but also of making sure that they wouldn't begin to grow again.

Dislodging the mud balls meant removing the sand and gravel, washing the sand, and regrading the gravel. The laterals also were cleaned and put in top operating condition. Then the sand and gravel were replaced, and the operators waited to see what would happen. It made no difference. The mud balls continued to grow, and filter runs limped along, accompanied by discouragingly frequent filter washings.

Too Much Wash Water?

So Mr. Read set about to discover what else might be causing the difficulty. The amount of wash water, he thought, might be the culprit. The customary practice in the past had been to wash two filters one right after the other. However, five minutes of washing any filter would very nearly empty the tank. It became apparent that the tank would have to be enlarged to hold more water or some other washing arrangement would have to be developed.

No one relished the thought of building a larger tank. The old one measured 20 feet in diameter and 20 feet in height. It held about 45,000 gallons of water when full. One 3-inch inlet, controlled by a float valve, allowed water to enter the tank.

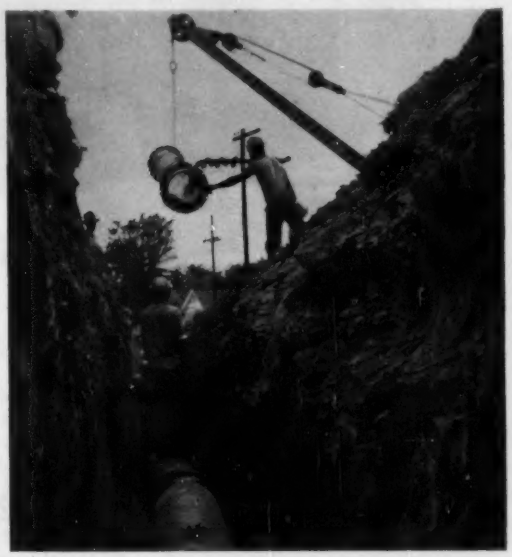
Instead of building a new tank, the operators decided to remodel the old one so that it could be filled faster. They did this by replacing the 3-inch inlet with a 6-inch line controlled by an altitude valve. The new line drew water from a main that carried 85 psi pressure. After this new arrangement had been completed, the filters could be washed for 10 minutes and the water in the tank would fall only 2 feet. Moreover, the tank would refill in 5 minutes, thus furnishing adequate wash water under good pressure.

Just to make sure that mud balls would no longer grow in the Tuscaloosa filters and choke the filter runs, the operators installed Palmer surface washes on each filter. Since then they have had no trouble. One filter is washed at a time—and it is washed clean. The filter runs now average 100 hours the year-round. With the present tank-filling arrangement, Mr. Read's crews can wash as many filters as may be necessary at once.

Filter problems weren't all that the plant had to contend with. A few years ago, the raw water started to show a manganese content of 0.2 to 0.8 ppm that colored the water black and distressed housewives. The operators corrected this difficulty by prechlorinating the water and adding lime, bringing the pH of the water up to 8.9. The manganese quickly oxidized and was picked off by the filters.

The capacity of the filter plant has been increased since the days of the mud-ball problems. Today, the plant has a rated capacity of 12 mgd, but which is actually closer to 13 mgd. More settling tanks have been built. The pumping system has been completely electrified, and facilities for chemical feeding have been enlarged to include fluorides.

It's All Mechanical



A line 16 inches in diameter is easily fitted around a moderate bend.

TRADITIONAL, old-fashioned buckets of hot lead and caulking irons were not in sight when the Parker Water and Sewer Sub-District added 19 miles to its distribution system last year. The district serves a suburban area west of Greenville, S. C., where the population has grown so rapidly that new mains were needed. The entire project, which gets its water from the city, used U. S. Pipe and Foundry mechanical-joint, cast-iron pipe. The pipe was all cement lined and varied from 2 to 16 inches in diameter.

The workmen learned to install the pipe very quickly. Out of approximately 100,000 feet of pipe installed, only one length failed under test. The use of mechanical joints allowed the pipe to be installed quickly even under difficult conditions. In one section of the project, the pipe had to be installed and backfilled immediately, in order to avoid creating a traffic problem on an adjoining highway. Runs of 4,000 feet had to be made before a test could be conducted. The use of mechanical joints permitted moderate changes in slope to be made without requiring special fittings.

The work was conducted under the supervision of C. M. Hunter, engineer and superintendent for the district.

Made of malleable iron. Single massive bolt. All sizes, 1/2" to 12" inclusive. For steel, cast iron and Transite pipe.

M. B. SKINNER COMPANY

SOUTH BEND 21, INDIANA, U. S. A.

SKINNER-SEAL SERVICE SADDLE

Street Construction & Maintenance

A Low-Cost Street Department Shed

Clarinda's low-cost equipment shelter is closed on the north and west, giving it protection from prevailing winter winds.

MANY SMALL COMMUNITIES do not have adequate storage space to house street equipment that is not in use. Consequently, vehicles, lumber, hose, pumps, and other supplies are permitted to stand out in the weather, often readily accessible to vandals and mischief makers.

When Clarinda, a city of 6,000 in southwestern Iowa, was faced with the need to abandon its existing street-department shed, it was confronted with the problem of erecting an adequate structure with limited funds. The city owns ten street department vehicles and three pieces of trailer equipment. We estimated that a fireproof building to house the equipment and to provide shop space for tools and supplies would cost about $30,000. Since such a cost was prohibitive, we were forced to use a more economical type of construction.

We decided to build a frame-and-metal building on creosoted poles with corrugated metal siding and roofing. The floor of the stalls is made of compacted crushed limestone that is 4 inches thick. From previous experience, we had learned that hinged doors or doors set on horizontal tracks often become bound by snow and ice or frost heave. And since overhead doors of the size and number that we required would be too expensive, we decided not to put any doors on the stalls.

Most of the storms in southwest Iowa come from the north and west. Therefore, we designed our building in an ell shape, with the equipment stalls opening to the south and east. The building consists of 11 stalls without doors and one with an overhead door entering the shop.

The stall depth is 28 feet to allow ample roof overhead, and to permit storage of materials at the back of each stall. The stalls have an overhead clearance of 12 feet to permit entrance of tall equipment such as a motor grader with cab. Some of the stalls are 12 feet wide, and others are 10 feet wide to accommodate equipment of different widths. One of the stalls has a concrete floor and frostproof hydrant for use as a wash rack.

The twelfth stall is a part of an enclosed shop in the corner of the ell formed by the two wings of the building. The shop is 40 feet long and 28 feet wide. It has a concrete floor, and is completely sealed with fiberboard walls and ceiling. It is insulated with a double layer of balsam wool.

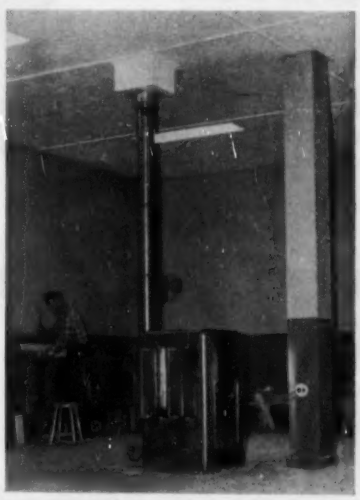
The shop is heated in the winter time by a circulating oil heater. We used an Underwriter-approved flue consisting of Transite pipe lined with clay which is supported by the ceiling joists. This saved the cost of constructing a masonry chimney.

Although there are no windows in the building, the shop has a walk-in door in addition to the 12-foot-square overhead door. The elimination of windows cut construction costs and makes the shop easier to heat in the winter and cooler in the summer. In addition, windows add to maintenance expense.

The shop is well lighted by recessed fluorescent fixtures in the ceiling that provide general illumination and do not interfere with overhead clearance. These lights are supplemented by adequate wall outlets for bench lamps and "trouble" lights for use in close work. A 220-volt outlet is provided to furnish power for an air compressor.

The total cost of construction of this building, including wiring and heating, was $6,500. Our street department now has a "home of its own" after many years of makeshift arrangements. Best of all, we didn't have to wait until that improbable day arrived when we would have $30,000 to pay for the construction of an ideal building.

R. H. VAN DEUSEN
City Manager
Clarinda, Iowa



The snug and well-lighted repair shop in the corner of the L-shaped building.

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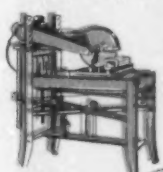

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Parks and Trees

Baltimore Finds Young New Elms Economical

THE Department of Recreation and Parks in Baltimore has found young trees most economical for new plantings in parkways. Charles A. Young, Jr., park forester, reports that trees of 1 and 1½-inch caliper make the most rapid acclimation in the Baltimore area and are more economical in initial cost, labor, and care than larger sizes.

The Forestry Division of the Bureau of Parks has experienced gratifying results with the new Augustine Ascending Elm variety, which has been given an important place in the park planting program.

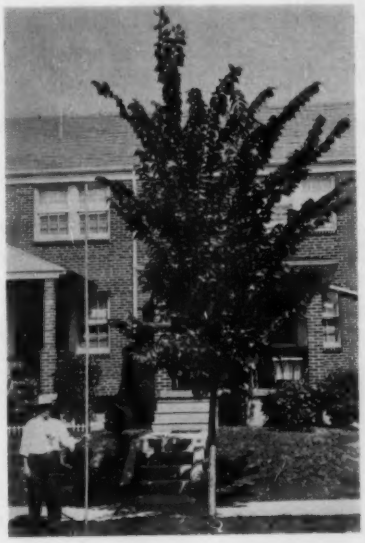
History of the New Variety

The Augustine Ascending Elm is a mutant of the American elm, and was discovered about 20 years ago in Normal, Ill., by the late Archie Augustine, noted horticulturist and former president of both the Illinois and national nurserymen's associations. The tree was subjected to exhaustive testing, research, and development and then propagated for general planting under the supervision of an association representing Mr. Augustine's family and Illinois tree experts.

The new variety evidences many characteristics of special importance for city planting. It grows about 20% faster than other varieties of elm, has strong trunks, crotches, and branch system, develops an upright form, and has a compact root system. It has unusual health characteristics and resistance to storm damage, and has dense foliage which provides good shade. Because of its compact, columnar form, the shade of this variety does not interfere with lawn development.

Baltimore's first Augustine Ascending Elms were purchased as 1½-inch caliper stock 8 to 10 feet high in November 1949, and were planted the same month. By September 1953, the trees had grown to 5½-inch caliper and 17 to 20 feet in height, and all exhibited healthy development.

These trees were planted by the standard method used by the Baltimore Department of Recreation and Parks. This prescribes digging a hole twice the size of the root spread and replacing all soil with prepared soil of the following composition: top soil, 80%; rotted cow manure, 10%; peat moss, 10%. The trees were staked with 8-foot oak or steel fence posts, and supported by wire covered with used inner tubing or garden hose.



These pictures show how much Baltimore's elms have grown in about a year.

Future problems of pavement breakage by uplifting roots are eliminated by providing sufficient room for the tree to grow normally at the base. Planting trees in grass plots less than 36 inches wide is the cause of raised footways, Mr. Young states, since it is the root flare at the base of the tree, rather than the subterranean roots, that raise the footways.

Baltimore's experience with young Augustine elms is typical of that of other cities, according to the Augustine Ascending Elm Research Association which gathers annual experience reports from more than 200 municipalities where these trees have been planted since 1949.

In every instance, young trees have thrived mightily and have retained the characteristics of the strain. In some places, the new variety has been specified in the municipal landscaping code for planting on public parkways and, in others, it has been recommended by city and park officials.

National Capital Parks System Controls Dutch Elm Disease

SUPERINTENDENT of Parks Edward J. Kelly of the National Capital Parks system reports a substantial reduction in the number of cases of Dutch Elm disease found in the parks during 1953. This disease, which has completely wiped out the elm tree population in some East Coast cities, increased greatly in the Washington area between 1948 and 1951. Its control has been vigorously pursued by both National Capital Parks and District of Columbia horticulturists during the past six years.

The number of new cases found in the parks dropped from 65 in 1951 to 32 in 1953, and in the over-all Washington area from 470 in 1951 to 203 in 1953. Park officials believe that the disease can be effectively controlled in the Washington metropolitan area and that the magnificent American elms which ornament the park system and arcade Washington's famous avenues can be saved, provided funds are made available to continue vigorous methods of control adopted by Park and District officials and that there is no relaxation in the control program.

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This photograph shows the green walks on Bedloe's Island around the Statue of Liberty

Home-owners are proud of their distinctive "Walk-Top-sealed" driveways

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Walk-Top seal is *standard* for thousands of school play areas throughout the country. In San Francisco, for example, over 2,000,000 sq. ft. of school playgrounds, both old and new, have been sealed with Walk-Top in the last two years alone. Other typical applications may be found in Akron, Pittsburgh, Washington, D. C., Providence, Fresno and Cincinnati. School and Park Authorities in these cities and in many others repeatedly specify Walk-Top.

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Sewerage & Sewage Treatment

Industry Can Use Sewage-Plant Effluents

AS AN INDUSTRIAL WATER, sewage-plant effluent may be better than fresh water. This has been the experience of the Cosden Petroleum Corporation at its Big Springs, Texas, refinery, according to E. B. McCormick, who discussed this problem at the recent Industrial Health Conference at Houston, Texas.

The refinery requires almost half as much water as the entire city of Big Springs uses in a day. Prior to 1943, the source of refinery water was a series of small wells. However, the water was hard and caused many difficulties. Refinery operations dropped to a day-to-day basis.

In 1944, when the city completed its sewage-treatment plant using the Hays Process of contact aeration, the refinery contracted for full rights to the effluent, feeling fortunate in having acquired an adequate source of process water. The city agreed to supply water having a BOD of no more than 25 ppm, a suspended solids content of 20 ppm, and a chlorine residual of not less than 0.05 ppm. The refinery pays the city 5 cents per 1,000 gallons for the effluent.

Constant water analysis is required, for some oils, soaps, and other chemicals in the sewage will get through into the effluent regardless of treatment. If the organic matter is troublesome, breakpoint chlorination may be required, particularly when using the effluent for high-pressure steam generation. Ammonia in the effluent often makes it impractical to use the standard bronze trim in valves and pumps. Iron or stainless-steel trim may be preferable.

Almost all industries have water-treatment problems, Mr. McCormick concluded. Although sewage-treatment effluent may be more difficult to treat than many waters, this refinery found it a practical source of industrial water that can be utilized satisfactorily. Though treating and control costs are high, they are not excessive and no greater than those for treating hard water.

Better Sewer Pipe Needed

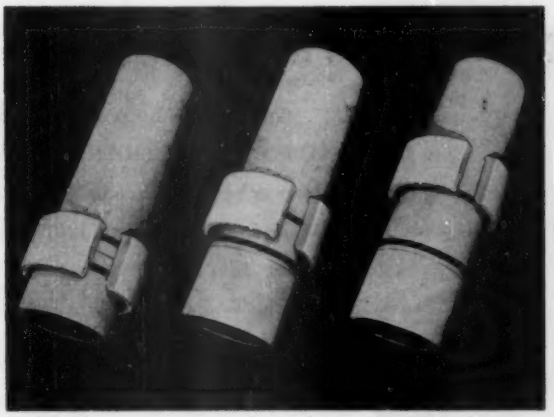
SEWER PIPE PRACTICE is due for reexamination, judging by the interest in better sewer pipe at the recent meeting of the Federation of Sewage and Industrial Wastes Associations in Miami. Evidently, the sewage men are becoming annoyed with the substantial amount of infiltration water that overloads their sewers and treatment plants, as well as the numerous joints of doubtful watertightness that they have to accept in standard sewer pipe. Infiltration-resistant pipe eliminates these problems.

For example, the display of the Armco Drainage and Metal Products, Inc., Middletown, Ohio, found interest, not only for its round, corrugated pipe, but for special Multi Plate sections, both for new structures and for relining old, failing structures.

The Ring-Tite rubber-ring coupling used with Transite sewer pipe drew attendance at the booth of the Johns-Manville Company of 22 East 40th Street, New York 16, N. Y. A recently completed installation of more than 5 miles of Transite pipe showed water infiltration of 0.85 of a gallon per inch of diameter per hour per mile of pipe. Pipe sizes varied from 6 to 18 inches in this installation.

The "roller-suspension" type of sewer pipe developed a substantial amount of interest at the booth of Lock Joint Pipe Company, P. O. Box 269, East Orange, N. J. This unique type of pipe permits the use of a very dry concrete mix that has an unusually high stone content. This results in a stronger pipe, less subject to abrasive action.

The joint produced by this system has proved to be remarkably true and can be made amply resistant to infiltration by the use of Lock Joint's Riblock rubber-gasket seal.



A step-by-step illustration shows how J-M rubber-ring coupling effectively cuts the infiltration that overloads sewers.

Infiltration could become a problem in this installation. The use of Armco large-diameter pipe is the engineer's solution.

THROUGH Good Roads MACHINERY "HANDY" SPREADERS PASS THE FINEST ROADS IN THE WORLD

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Sanitary Fill Series

Temperature Is a Test of Decomposition

SANITARY LANDFILL is more than a sanitary means of disposing of a city's refuse. It also should be considered a means of reclaiming wasteland for productive service. This second function is achieved only when the work is well done. If the operators don't pack the refuse solidly, the fill will settle badly, will decompose slowly, and will be unreliable for useful purposes. By testing the temperature of the ground, we have discovered, we are able to judge the extent of bacterial action.

In Coeur d'Alene, in northwestern Idaho, the city has used the sanitary fill for the past three years to reclaim many waste areas with refuse from a population of about 15,000. The current operation is on property owned by a local yacht club, and the filled land will probably be used for recreational purposes, boat storage, and auto parking.

Each layer of the fill is 6 feet deep and is covered by 2 feet of earth. The operation covers about half an acre of area per year. One man, operating an International TD-9 crawler tractor equipped with a Drott Bullclam shovel, is able to do all the work. Settlement has been negligible.

The Test at Work

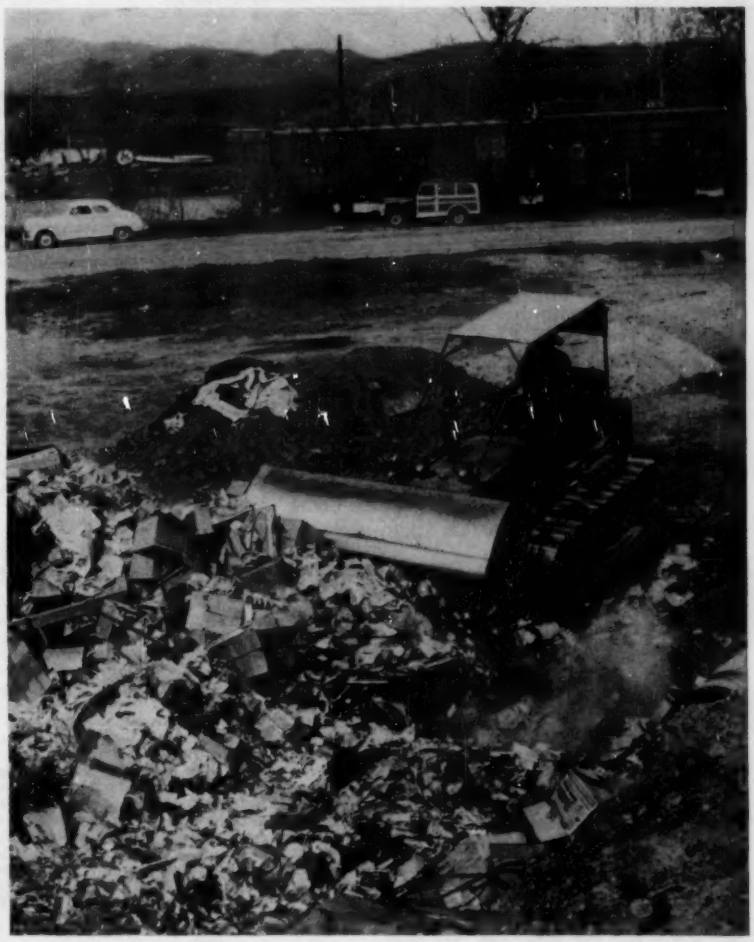
This does not mean that the material in the fill has not decomposed and become an inert product. A simple test to determine whether the fill has been "working" is to measure the temperature in the fill. Refuse covered for three months will attain a temperature that is at least 20° warmer than the surrounding ground. After the refuse has been covered for two to three years, however, the temperature drops to the same degree as the surrounding ground. This fact provides evidence that the bacterial action has dropped enough so that it no longer constitutes a problem.

The city has developed an operating practice that keeps the work confined to easily handled limits. We use the ramp system. (See THE AMERICAN CITY, January 1954, pp. 88-90.) Instead of digging a long trench, the operator excavates a short one, about twice the width of the tractor, and pushes the earth forward, grading it upward. Trucks deliver refuse to the excavation and dump it at the open end of the fill. The tractor pushes it up the ramp, compacting as he operates. At the end of the day, the tractor covers the packed refuse with earth that has been excavated for the next day's receiving trench.

Most cities, including Coeur d'Alene, have a bad habit of waiting until disaster almost strikes before they act. Our city was almost on the verge of a rat infestation when we adopted the sanitary fill. We are very grateful for the fine help given us by our State Department of Public Health under the direction of L. J. Peterson and Health Engineer H. C. Clare.

We have prepared a number of colored slides illustrating our work. We will be glad to lend these to any interested city official interested in this type of refuse disposal.

D. E. NEDRY
Superintendent of Sanitation
Coeur d'Alene, Idaho



Coeur d'Alene's tractor pushes refuse up a slope to build a ramp-type sanitary fill.

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Please check the list of interesting catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers at the addresses given. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, 470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation.

3/54

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Street Flushers for Large and Small Communities

101 Information on a full line of dependable street-flushing and cleaning equipment is contained in *Bulletin 54-2*, from the ROSCO MFG. CO., 3118 SNELLING AVE., MINNEAPOLIS 6, MINN. Illustrated are various capacity Model MTA Street Flushers, 1,000-gallon capacity flushers for truck or 2-wheel type mounting, and power-driven street cleaners. Copies sent on request.

Loader Performs Many City Jobs

102 Featuring adjustable arms that keep the bucket in correct position with the ground, a box-frame construction oil filter, and a variety of attachments, this handy loader works for you all year 'round. It shovels and loads, busts concrete, drives posts, and lifts bulky material. For additional information on the Davis Loader, write MIDWESTERN INDUSTRIES, INC., 1009 S. WEST ST., WICHITA, KANS.

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Improved Street Construction And Maintenance

106 The W. E. GRACE MFG. CO. offers a variety of equipment for constructing and maintaining your asphalt streets. Featured are spreaders for hot or cold asphaltic concrete, drag brooms, sheep's-foot rollers, and road sweepers; also pneumatic rollers, barrel heating kettles, and street cleaners' carts. Address the company at 6009 S. LAMAR ST., DALLAS, TEXAS.

Street Lights Go Modern With Mercury Lighting

107 Communities considering the modernization of street-lighting facilities can get a complete estimate and other pertinent data by writing the A & X STEEL PRODUCTS CO., 2825 ANNAPOLIS RD., BALTIMORE 27, MD. This company recently furnished the City of Baltimore with poles and arms for its first mercury lighting installation. Adequate lighting was assured by mast arms 6 to 10 feet long, with a maximum mounting height of 30 feet.

Trouble-Free Pumping Of Sewage Sludge

108 A Marlow Plunger Sludge Pump installed in your municipal sewage disposal plant will handle anything from raw and digested sludge to settled oil solids. Durable, these units offer dependable, low-cost service, with a minimum of maintenance. They are described in *Bulletin W-53*, obtainable from MARLOW PUMPS, RIDGEWOOD, N. J.

Light-Sensitive Switch Turns Street Lights On and Off

109 The lamps on street-lighting circuits are turned on and off either by manual switches in the generating station or substations, or automatically by photoelectric switches which are sensitive to gathering darkness and approaching daylight. A plug-in photoelectric switch is now offered of very small size and power consumption. A translucent case makes the switch sensitive to light from all directions. To control this high sensitivity so that lightning flashes and headlight beams will not operate the switch, a time delay of two minutes occurs between increase in light and the turning out of street lamps. For Technical Bulletin, describing the Lumatrol Photoelectric Light Switch, write MICRO BALANCING, INC., GARDEN CITY PARK, N. Y.

This Vibrator Gives You Better Concrete Faster

110 All know that the best grade of concrete must have a harsh, dry mix. Unfortunately, this is the most difficult type of concrete to handle—unless, of course, you are placing it with the new White ME-13 vibrator. This powerful vibrator maintains its kick and speed even in extra-stiff concrete. It moves concrete into those difficult-to-reach portions of the forms effortlessly. It can be mounted conveniently on a rigid or swivel-type base and is carefully sealed to prevent damage from dust or blowing sand. Get the full story on this and other street-construction equipment from the WHITE MFG. CO., ELKHART 1, IND.

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111 What do you require in a paving machine? Low cost? Speed? Maneuverability? The Overman Stone and Bituminous Spreader combines these advantages, laying up to eight tons of paving material in some 30 seconds. The unit is easy to maneuver on small driveways and lots, and may be towed by truck at regular road speeds. Write I. J. OVERMAN MFG. CO., BOX 203, MARION, IND.

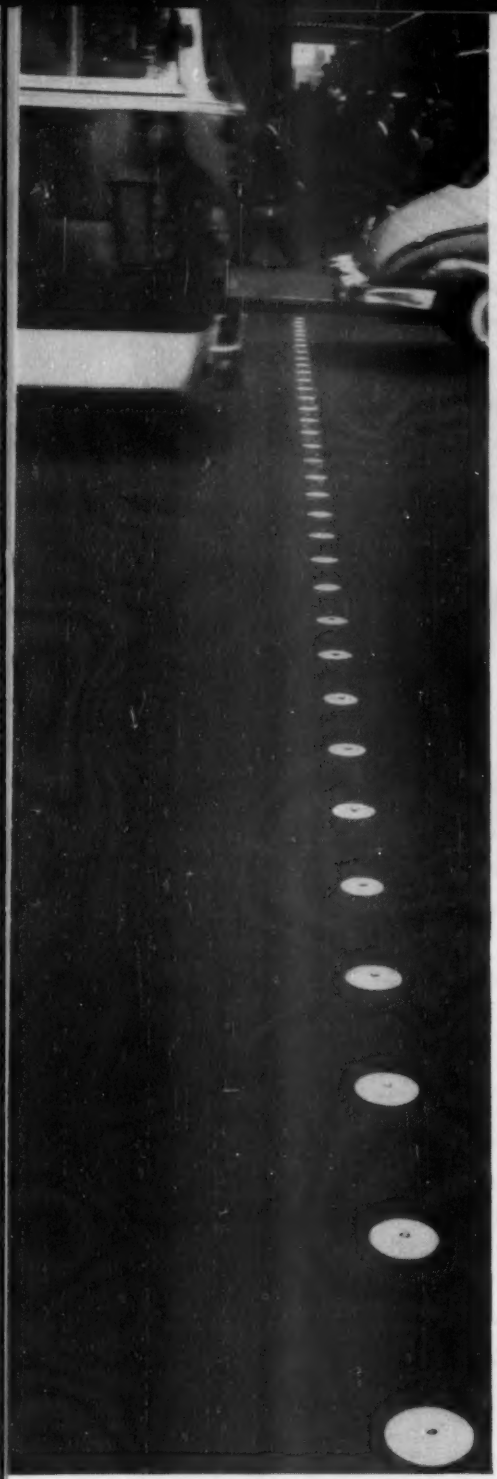
Loading Problems Solved

112 Here's the solution to your loading problems. It may be sand, gravel, cold-mix asphalt, windrowed dirt from a street subgrade or ditch, or ice and snow from your streets or airport; the new, husky Athey HiLoader handles them all, giving you performance and efficiency that will make your budget smile. Truck drivers find it no problem to maneuver under the high-discharge, swivel-type conveyor. Learn about the HiLoader in a new, colorful 8-page booklet from ATHEY PRODUCTS CORP., 5631 W. 65th ST., CHICAGO 38, ILL.

Garbage Grinders Lower Collection Costs

113 In an effort to eliminate costly, unsanitary garbage collection and disposal, communities throughout the country have installed over 500,000 of these garbage grinders. A community-wide installation of the Waste King Pulverator lowers taxes, sets high health standards, and does away with garbage cans and garbage trucks. For your copy of the *Recommended Standard Garbage Grinder Ordinance*, write GIVEN MFG. CO., DEPT. AC-2, 3450 WILSHIRE BLVD., LOS ANGELES 5, CALIF.

(Please turn to page 33 for more Bulletins)



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In addition to use for municipal traffic lanes and crosswalks, Tenite markers are ideal for garages, parking areas, and many types of industrial plant installations. For further information, or help in locating a source of supply, write or send coupon to EASTMAN CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE, *subsidiary of Eastman Kodak Company.*

EASTMAN CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE

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Saves time...money
All steel from one source

When you combine all your steel requirements on a single order to Ryerson you cut costs in many ways. One call—one order—save purchasing time and you also simplify bookkeeping—reduce clerical expense.

In addition, combining most carbon steel purchases under the Ryerson quantity differential plan brings further savings. And with larger quantities you often effect substantial reduction in freight on long hauls.

All these economies are possible when you call Ryerson for steel because Ryerson stocks are the world's largest and most diversified. Carbon steel, alloys, stainless—no matter what analyses you need, no matter what shapes and sizes, you can be practically certain of getting them all with just one call to Ryerson.

You can be sure of prompt delivery, too. So next time you need steel, no matter how many kinds or sizes, call your nearest Ryerson plant.

PRINCIPAL PRODUCTS

CARBON STEEL BARS—Hot rolled & cold finished
STRUCTURALS — Channels, angles, beams, etc.
PLATES—Many types including Inland 4-Way Safety Plate
SHEETS—Hot & cold rolled, many types & coatings
TUBING—Seamless & welded, mechanical & boiler tubes
ALLOYS—Hot rolled, cold finished, heat treated
STAINLESS—Allegheny bars, plates, sheets, tubes, etc.
REINFORCING—Bars & Accessories, spirals, wire mesh
BABBITT—Five types, also Ryertex plastic bearings
MACHINERY & TOOLS—For metal fabrication

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND • DETROIT
PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 30

Electric Starter Featured For Outboard Motor

114 Emergency boats can now be equipped with a new 25-hp outboard motor that contains a built-in electric starter. Replacing the starter cord, this new feature is driven by an electric motor and operated by a push button. A second button actuates an electrically operated choke for "cold" starts. Details on the Evinrude electric-starting Big Twin are available from EVINRUDE MOTORS, 4339 N. 27th ST., MILWAUKEE 16, WIS.

Attachments for Your A-C Tractor

115 Cities operating HD-5, HD-9, HD-15 or 20-ton HD-20 Allis-Chalmers tractors, can increase their usefulness by adding hydraulic- and cable-controlled bulldozers, gradebuilders and root rippers. Designed especially for the A-C Tractor by THE BAKER MFG. CO., SPRINGFIELD, ILL., these attachments enable your tractor to handle many more jobs quickly and efficiently. Write for literature.

Insurance Savings Pay for Sprinklers

116 How fire safety cuts yearly insurance costs is shown graphically in a 14-page booklet available from GLOBE AUTOMATIC SPRINKLER CO., 250 PARK AVE., NEW YORK 17, N. Y. It also illustrates the new "spray" type of automatic sprinkler with a fusible element of solid organic chemical for detecting and stopping fires.

Excavator Features ½-Yard Dipper

117 The company which recently introduced the improved 15-ton-lift capacity, ½-cubic-yard-dipper capacity 205 Excavator, offers you an illustrated catalog describing the unit and explaining its operating features when equipped as a shovel, hoe, crane or dragline. The 205 is available crawler-mounted or mounted on a truck body. It is made by the KOEHRING CO., MILWAUKEE 16, WIS.

Improves All Types Of Water Filters

118 Use Anthrafilt instead of sand in your water filters and watch your water filter problems disappear. Filter runs will lengthen. Wash water requirements will drop. Anthrafilt grains will resist coating, caking or balling. It forms an excellent support for synthetic resins, and is admirably suited to use in swimming pools as well as all other water-filter applications. Get the full story from PALMER FILTER EQUIPMENT CO., 822 E. 8th ST., ERIE, PA.

Makes Quick Work Of Brush Disposal

119 Using an Asplundh Chipper, park employees can reduce brush up to five inches in diameter into small chips, which are then blown into a truck and hauled away. One load of these chips equals some three ordinary loads of brush, cutting costs from 15 to 25%. Write the ASPLUNDH CHIPPER CO., 505 YORK RD., JENKINTOWN, PA.

Riding Mower Facilitates Park Maintenance

120 It's easy to keep public lawns, parks, and school and hospital grounds looking attractive when you provide maintenance men with these new riding mowers. Furthermore, it's possible to do difficult cutting jobs in less time. The Meade Model B Mower will make a complete turn in a 60-inch circle. It may be operated forward or reverse, and is available in reel 25 inches, or rotary 20-inch cuts. Write MEADE PRODUCTS MFG. CO., 220 E. CARTHAGE, MEADE, KANS.

Makes Termites Tremble

121 The buildings, fence posts and other wooden structures in your community can be protected against "tunneling termites," rot and decay with this effective, low-cost wood preserver. Avenarius Carbolineum is an easy-to-apply oil that leaves a lasting stain. Said to "double the wood's ordinary life," it also cuts repainting costs. Get literature from CARBOLINEUM WOOD PRESERVING CO., CARBOLINEUM BLDG., 528 W. HIGHLAND AVE., MILWAUKEE 3, WIS.

Glass Blocks Replace Conventional Window Pane

122 Glass blocks with the insulating value of masonry, and the light-transmitting properties of glass are finding increasing use in the construction of modern public buildings. Easy-to-clean, they transform blinding daylight into comfortable illumination. Maintenance costs are low, and privacy and protection assured. Get *P. C. Glass Blocks for Industrial, Commercial, and Public Buildings* from the PITTSBURGH CORNING CORP., PITTSBURGH 22, PA.

Prevents Accidents On Public Property

123 Protect the public by providing a safe, durable walking surface for stairs and other walkways. One way to do this is to install Wooster nonslip, wear-resistant safety treads, fully described in this new 12-page catalog. The book includes a complete variety of treads and the metals in which they are available. Write WOOSTER PRODUCTS, INC., DEPT. B 1, WOOSTER, OHIO.

Pipe for Sewer Service Lines

124 Get the full story of a root-proof pipe for sewer service lines, easy to install in either a dry trench, or a wet trench with proper bedding. Taper-sleeve coupling provides a water-tight joint that can be made in the field. The ORANGEBURG MFG. CO., INC., ORANGEBURG, N. Y., makes both a "Life-Time" pipe, and a perforated pipe, each fully described in new literature.

Boltless Tapping Sleeves

125 The COREY SALES CO. offers new tapping sleeves for water pipe that may be installed without bolts. Caulking, too, is eliminated for the entire life of the pipe service. For literature, address the company at 3279 VERDUGO RD., LOS ANGELES 65, CALIF.

Portable Electric Power

126 Wherever the job is, this new portable electric plant will operate chain saws, pipe threaders and cutters, drills, and other tools featuring universal (AC-DC) motors. The plant weighs 101 pounds and is equipped with handles for carrying. KOHLER CO., KOHLER, WIS., also makes electric plants for trucks, street repairs, and police and fire departments. Request *Folder 17-S*.

Water Meters

127 If your community is situated in a temperate or warm climate not subject to freezing conditions, this Watch Dog disc water meter is well worth your attention. The regular split-case model comes in ⅝-, ¾- and 1-inch sizes, with an open or enclosed gear train. Address the WORTHINGTON-GAMON METER DIV., WORTHINGTON CORP., 296 SOUTH ST., NEWARK 5, N. J.

Shopping-Center Lighting

128 Large parking areas required for modern shopping centers have to be well lighted for safety, fast traffic turnover, and to encourage nighttime business. A new folder covers various Monotube pole designs and bracket arrangements especially designed for shopping-center parking lots, and shows typical installations. For more facts on poles for shopping-center lighting, write for *Folder LS-15* from THE UNION METAL MFG. CO., CANTON 5, OHIO.

Everything for the Playground

129 The J. E. BURKE PLAYGROUND EQUIPMENT CO., FOND DU LAC, WIS., makes a complete line of swings, sliding poles, and other park playground equipment, plus sturdy picnic tables for outdoor recreation areas. Write for literature.

Quick-Set Sign Posts

130 Punched with holes 1 or 2 inches apart, these steel sign posts enable you to put signs up faster to stay up longer. The posts are coated with baked-on paint, and are designed in lengths to meet your requirements. The flanged-channel sections are made of heavy-duty high carbon rail steel. Write BUFFALO STEEL DIV., H. K. PORTER CO., INC. OF PITTSBURGH, TONAWANDA, N. Y.

Locates Underground Valves

131 A new valve-box locator that can be tested for 15 days without cost, features both speed and accuracy. The Aqua operates with a minimum of needle-spinning action. It incorporates an extra conductor development, new in location instruments. Address the AQUA SURVEY & INSTRUMENT CO., 2518 LESLIE AVE., CINCINNATI 12, OHIO.

Standard Badges for Police & Fire Departments

132 A company that has been making standard badges for police and fire department officials for the past 75 years, is offering a descriptive, new catalog, illustrating each badge. For your copy, write the C. G. BRAXMAR CO., INC., 216 E. 45th ST., N. Y. 17, N. Y.

(Please turn to page 35 for more Bulletins)

compare for operator safety with any other tractor loader!

Note that the operator on a BAKER-LULL SHOVELOADER sits high and safely remote from moving bucket arms, which are located in front of him. This eliminates the constant hazard to life and limb of flailing control arms beside and above him, as in other makes.

Note, too, that operator has unobstructed 360° visibility to see where he's going at all times. There are no blind spots at sides caused by control arms as bucket is raised. From the driver's seat he has full view of the bucket in every position—even when digging.

Safer operation is also assured by 4-wheel hydraulic power brakes, hydraulic power steer on front or rear or all four wheels, big 14.00 x 20 hi-flotation tires, 100-inch wheelbase for stability, etc., etc.

Other exclusive built-in features increase utility by providing natural digging and full bucket action, improved rough-terrain operation, greater mobility, longer life and lower maintenance.

Standard 1½ yard bucket is interchangeable with 1¼ yard or 2½ yard sizes, also forks, lifting crane, backfill blade, bulldozer or snow plow. Write for 8-page descriptive bulletin. The BAKER-LULL Corporation, 358 West 90th Street, Minneapolis 20, Minn.

THE BAKER-LULL CORPORATION,
358 West 90th Street • Minneapolis 20, Minn.

Please send 8-page illustrated specification bulletin AD-55 on your 4-Wheel Drive SHOVELOADER

NAME.....

COMPANY.....

ADDRESS.....

CITY.....STATE.....

Baker Lull handling equipment

SHOVELOADER

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 30

Get the Real Facts On Loader Operation

133 This detailed study of a county highway department's operations, describing Payloader tractor-shovels in operation on a variety of road jobs gives the kind of facts that you can rely on. Included are such jobs as loading gravel from creek beds and pits, widening roads, cleaning ditches and plowing snow. For *Job Study No. 22*, write THE FRANK G. HOUGH CO., 710 SEVENTH AVE., LIBERTYVILLE, ILL.

Faster Trenching At Less Cost

134 Handle the widely scattered city trenching work with a quick-traveling unit that offers low-cost service. This rubber-tired 88 Trenchmobile drives anywhere at speeds up to 12.6 mph. It provides one-man trenching on gas and water mains, service connections and underground cables. Write the PARSONS CO., NEWTON, IOWA, for a new bulletin.

Controls for Waste Treatment Equipment

135 Municipal sewage- and waste-treatment plants can choose from a complete line of manually, semi-automatically and fully automatically controlled chlorinators, that will disinfect sewage and eliminate toxic-waste water difficulties. This equipment provides an effective, economical way to control watercourse pollution. Write WALLACE & TIERNAN, INC., 25 MAIN ST., BELLEVILLE 9, N. J.

A "Must" for Water Repair Crews

136 This is the heater that water repair crews have been looking for. Using Insto-Gas, the Jumbo furnace melts lead or other pipe-joining compounds in minutes. Its convenient, yet sturdy design gives precise, thoroughly safe control of the flame, and allows easy accessibility to all types of work. You can also use the furnace for soldering, sweating copperpipe fittings, preheating and thawing. Get all the details from the INSTO-GAS CORP., DETROIT 7, MICH.

Aggregate Spreader for Asphalt Streets

137 Winter damaged streets get a new lease on life when they are covered with asphalt and aggregate, properly applied. You have no need to worry about the work if your street crews are equipped with Baughman spreaders. The company has a spreader for any budget requirements, from the modest Model SC-52, pull type, to the big Spread-Mobile that will take care of your ice-control problems in winter, when the street work is over. Learn about the full line by writing the BAUGHMAN MFG. CO., 148 SHIPMAN RD., JERSEYVILLE, ILL.

Operates Parking Lots Automatically

138 Why spend extra for attendants when the new Parcoa card-key control system will operate public parking lots automatically? The entrance and exit gates are actuated by coded card-keys, assuring 100% collection. Installation costs are low, and maintenance is kept at a minimum. Write PARKING CORP. OF AMERICA, 33 N. LaSALLE ST., CHICAGO 2, ILL.

What to Look for in a Water Meter

139 When choosing water meters, look first for accuracy, then for simple design and good performance records. Fully interchangeable parts are also desirable to insure quick, low-cost maintenance. Literature on water meters that stress each of these advantages is available from the BUFFALO METER CO., 2902 MAIN ST., BUFFALO 14, N. Y.

Mechanical Joint Cast-Iron Pipe

140 An efficient, inexpensive method of distributing water and gas is to use cast-iron pipe that is centrifugally cast and equipped with mechanical joints. The ALABAMA PIPE CO., ANNISTON, ALA., makes this pipe in long lengths with bell-and-spigot or flanged mechanical joints. Super de Lavaud pipe is available with or without centrifugally applied cement lining.

A Free Kit That Explains Photocopying of Records

141 Reports and inquiries to THE AMERICAN CITY show increasing interest in photocopying as a method of duplicating many municipal records and documents. An information kit is available, giving many facts about the process, including how to photocopy in color, and with numerous applications that lessen handling of papers. The kit is free, from the AMERICAN PHOTOCOPY EQUIPMENT CO., 1920 W. PETERSON, CHICAGO 26, ILL.

New 2-Way Radio Expedites Police Work

142 Any police department can operate the Multi-Master 2-way radio as a fixed station or a mobile unit, on AC or DC current. Easily adapted to narrow-band operation, the radio is available from 2½- to 60-watt output, and may be transported from one location to another. It provides range, power, and static-free reception. BENDIX RADIO, DIV. of BENDIX AVIATION CORP, BALTIMORE 4, MD., also offers a full line of accessories, including hand sets, speakers, antennas and shock mounts.

Aerial Maps Aid City Planners

143 Efficient city planning calls for accurate, up-to-date aerial maps made by expert photogrammetric engineers. This service is provided at less cost by the AERO SERVICE CORP., 236 E. COURTLANDT ST., PHILADELPHIA 20, PA. Write for literature.

Make Street-Name Signs With Reflectorized Letters

144 Make your own municipal signs with these detachable Stimsonite reflectorized cutout letters, designed by the AGA DIV., ELASTIC STOP NUT CORP. of AMERICA, 1027 NEWARK AVE., ELIZABETH 3, N. J. The complete alphabet is available, plus arrow accessories, with letters ranging in height from 6 to 24 inches. The detachable copy permits an inexpensive change of message, and simple correction of spacing errors.

New and Reconstructed Tennis Courts

145 The AMERICAN BITUMULS and ASPHALT CO., 200 BUSH ST., SAN FRANCISCO 4, CALIF., will send you a full-page color chart illustrating the construction of Laykold and Grasstex tennis courts, and showing the depth and type of each application. These courts are resilient, grit-free surfaces, constructed on true planes to drain off rapidly. Both compounds may be used to resurface old courts as well.

Dispose of Refuse At the Source

146 The CALCINATOR CORP. explains how communities can save thousands of dollars each year by advising a community-wide installation of these automatic home-disposal units. Calcinators are available in gas, electric, and LP gas models. They can be installed without water or sewage connections wherever a suitable flue is accessible. For full information, write the manufacturer at 28th and WATER STS., BAY CITY, MICH.

A Better Underpass With Flat-Base Pipe

147 A good way to construct underpasses and tunnels is to use a Flat-base pipe made of precast concrete. Easy to install, up to 100 feet of Universal Flat-base pipe can be laid and covered in one day. A heavy-duty conduit, it requires less maintenance and wears longer. For detailed literature, write THE UNIVERSAL CONCRETE PIPE CO., 297 S. HIGH ST., COLUMBUS 15, OHIO.

Sanitary Waste Receptacles

148 Furnish your municipality with sanitary waste receptacles that encourage use. The waste receptacles built by THE BENNETT MFG. CO., DEPT. AC-1-54, ALDEN, N. Y., have easy-to-open, self-closing doors; rounded, reinforced corners; and a smooth exterior surface. Each unit is made of rust-resistant steel and finished in green, gray or white baked enamel.

Longer-Wearing Fire Hose

149 According to Fire Chief E. H. Kline of Columbus, Ind., his department uses the same fire hose for from 18 to 20 years, washing it immediately after use, testing it each spring, and flushing it with water in the fall. This durable hose is made by the BI-LATERAL FIRE HOSE CO., 20 N. WACKER DR., CHICAGO, ILL., for easy loading and handling. Write for literature.

New Tractor-Shovel Does More Work Faster

150 The ALLIS-CHALMERS TRACTOR DIV. introduces the HD-15, an easy-to-operate tractor-shovel that will do a wide variety of jobs in less time. Incorporating the latest developments in tractor application, the unit handles both mounted and drawn equipment easily; is well balanced for maximum efficiency. For further data, address the company at MILWAUKEE 1, WIS.

(Please turn to page 36 for more Bulletins)

STOP RUST BEFORE IT STARTS!

use TROPICAL ACB PRIMER

The Rust Preventive that Saves 50% Painting Costs!

Fighting rust means constant expense. *Win this fight by stopping rust before it starts!* You can, with ACB Primer, as thousands of municipalities and industrial concerns do. On rust-free iron or steel it is a long-lasting barrier against rust . . . so long-lasting that many users estimate it saves up to 50% painting costs! Rust-breeding moisture can't penetrate its fast-drying, moisture-proof, paint-anchoring surface. Outdoors and indoors, even in filtration and sewage plants, it resists severe moisture. ACB Primer FIRST makes steelwork LAST! • Use Tropical heavy-duty paints for heavy-duty service: New rubber-base Cementkote for *outside* cement, cinder block, asbestos siding; Rhinamel for hydrants, signs, standards; Toconamel for graders, tractors, shovels.

FREE! **Get the facts on rust prevention! Your business letterhead request brings useful, money-saving facts on rust prevention on buildings, equipment. Write TODAY!**

THE TROPICAL PAINT & OIL CO., 1112-1284 W. 70th St., Cleveland 2, Ohio

Heavy-Duty Maintenance Paints Since 1883

TROPICAL

Subsidiary of
Parker Rust Proof Company

Catalogs for You

Write directly to the manufacturers or use coupon on page 30

A Dependable Water Pump

151 Water department officials are advised to write for *Bulletin 105-M*, for a detailed description of the Type-OD Aurora horizontally split-case, double-suction, single-stage centrifugal pump. The Type-OD provides low-cost water distribution. It may also be used for handling liquids, chemical solutions and oils. Address the AURORA PUMP CO., 66 LOUCKS ST., AURORA, ILL.

Why Haul Tree Stumps?

152 It takes a lot of work to dig up tree stumps. Furthermore, it involves hauling them away and storing them for future disposal. With the O'Brien Stump Cutter, both these steps are eliminated. Mounted on a 4-wheel drive, rubber-tired tractor, the machine cuts any size stump completely, using specially-designed cutting heads that work at any angle. For additional information, write METAL PARTS MACHINING CORP., WATERVLIET, N. Y.

Tree Sprayer Offers Effective Insect Control

153 One of the fastest and easiest ways to protect the shade trees in parks and recreational areas from insect parasites, is to use the John Bean Rotomist. Powered by a Willys "Jeep" engine, this improved air-delivery unit has a 29-inch axial flow fan, delivering 28,000 cubic feet of air a minute at 100 miles velocity. A descriptive catalog will be sent by the JOHN BEAN DIV. of FOOD MACHINERY and CHEMICAL CORP., LANSING 4, MICH.

Combination Shovel And Loader

154 It digs, it bulldozes, it loads and it carries. The Baker Lull Shoveloader, through its 4-wheel drive and 3:1 planetary gear reduction in each wheel, will work day in and day out under conditions that would positively stall many other pieces of equipment. Write for an 8-page descriptive bulletin to THE BAKER-LULL CORP., 358 W. 90th ST., MINNEAPOLIS 20, MINN.

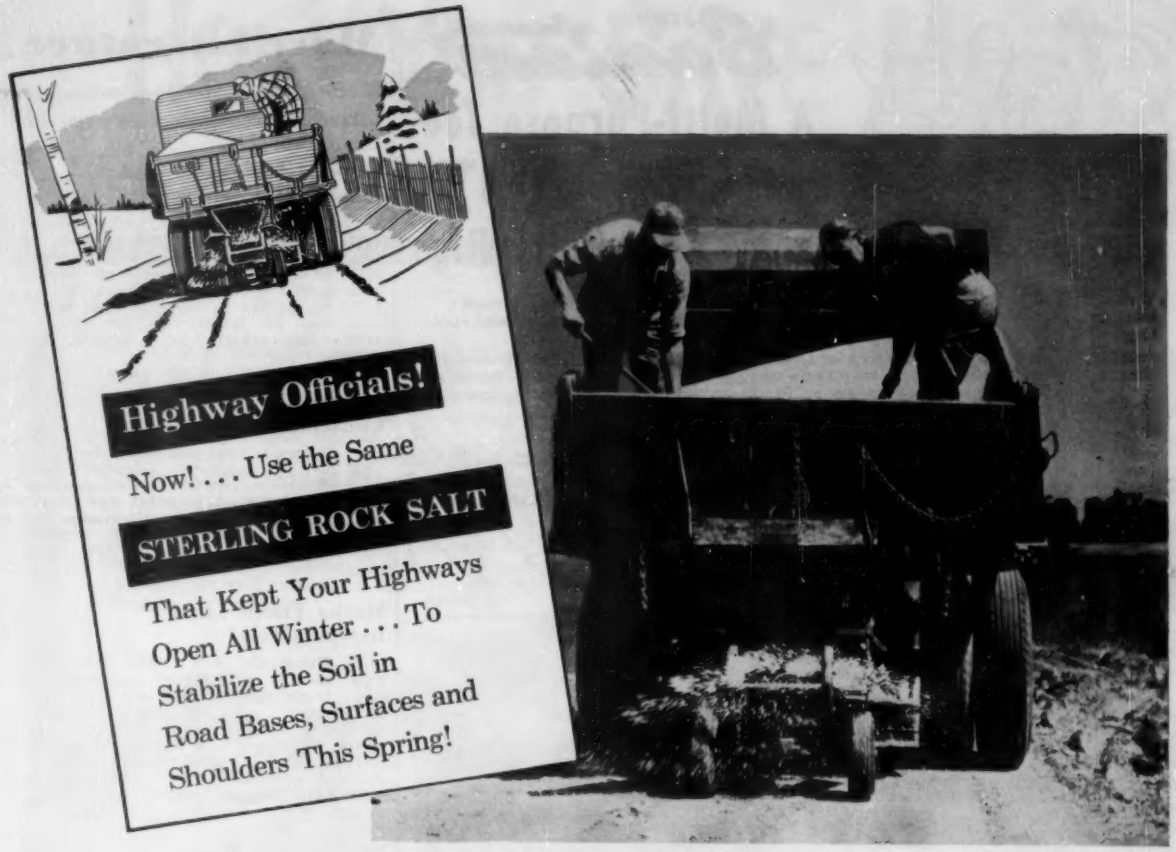
New Catch-Basin Attachment For Excavator

155 Mount this new attachment on your Pippin excavator and catch-basin cleaning becomes a simple, low-cost operation. Hydraulically operated, the excavator's dipper stick works the cable and sheave mechanism which rapidly lowers the orange-peel bucket as far as 19½ feet in the catch basin. The bucket is then filled and raised 9 feet above ground for loading. Get full data from PIPPIN CONSTRUCTION EQUIPMENT, INC., WHITE RIVER JUNCTION, VT.

Diesels Provide Low-Cost Power

156 Cut your community's power costs by equipping municipal power plants with heavy-duty Worthington diesel engines. These same engines installed in the St. George, Utah Power Plant some years ago, increased the plant's capacity about 500%. Additional information will be sent by the WORTHINGTON CORP., ENGINE DIV., SECTION E. 3. 2, BUFFALO, N. Y.

(See page 38 for more Bulletins)


Highway Officials!
Now! . . . Use the Same
STERLING ROCK SALT
That Kept Your Highways
Open All Winter . . . To
Stabilize the Soil in
Road Bases, Surfaces and
Shoulders This Spring!

TOUGHER ROADS! SHOULDERS THAT STAY PUT!

Stabilize the Soil and You Minimize Construction and Maintenance Costs!

Highway soil, properly stabilized with STERLING ROCK SALT, resists both excessive moisture and extreme dryness. Granular materials are firmly anchored. Even the strong vacuum action of speeding traffic raises little dust. Precious gravel is not blown away.

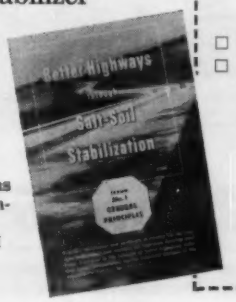
Gravel roads . . . inexpensive to build and easy to maintain . . . become first class surfaces, smooth, permanent. Bases and shoulders of concrete or black-top highways do not "break up" or "separate" under weather extremes or the cruel beating of heavy trucks.

Start now, using whatever STERLING ROCK SALT you have left over from the winter. Forecast your needs and order now for spring and summer. Make sure of delivery when you need it!

"Nature's Own Soil Stabilizer"

STERLING ROCK SALT

Free! Send for these Bulletins —filled with practical, on-the-job information for roadmen . . .
"BETTER HIGHWAYS THROUGH SALT-SOIL STABILIZATION"



INTERNATIONAL SALT CO., INC.
Industrial Division, Scranton 2, Pa.

☐ Please have representative call.

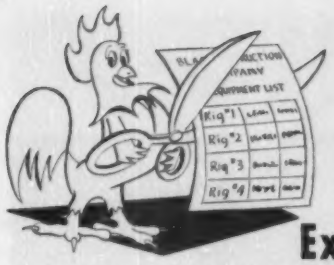
☐ Please put me on your list to receive "Better Highways" Bulletins.

Name _____

Title _____ Dept. _____

Street _____

City _____ Zone _____ State _____



SCHIELD Bantam®

A Multi-Purpose Tool

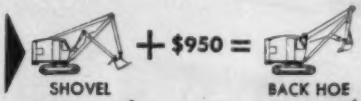
CUTS OUT

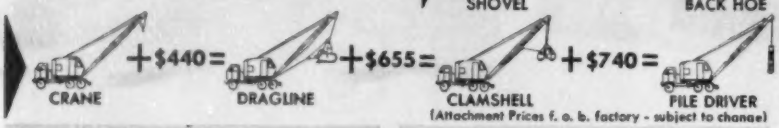
Expensive Specialty Rigs

WHY BUY 4 or 5 ONE-PURPOSE MACHINES . . . one to do loading work . . . another to do your trenching and ditch clean-out . . . one to handle lifting and spotting . . . and another special rig to do backfilling?

Just ONE BANTAM, either Truck or Crawler-Mounted, with 9 different, easy-to-change, front-end attachments lets you do all these jobs and plenty more - faster, at far less cost. Your machinery dollars go further with a flexible, versatile, low-cost BANTAM.

After buying a complete Bantam Shovel, or a complete BANTAM Crane, here's all you invest in extra attachments which let you handle all kinds of lifting and excavating jobs with only 1 basic machine:





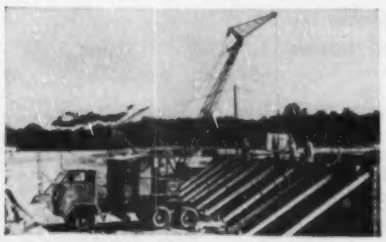
(Attachment Prices f. o. b. factory - subject to change)

LOADS—UNLOADS RR Cars or Trucks fast. Clamshell handles 80 yds. hourly . . . truck goes anywhere to do the job, finish it, get on to next one fast.

DITCHING or TRENCHING . . . 100' of five foot depth per hour—goes to 16' depths. Add blade to bucket for a fast backfiller.

HANDLES STOCKPILED MATERIALS . . . over 100 yds. per hour. 360° swing for high-speed production. Crawler ideal for cramped quarter operation.

TRAFFIC KEEPS ROLLING while Bantam replaces water main in downtown area. Crane with clamshell quickly removes old pipe, replaces, refills holes.



CONCRETE OR CULVERT PLACING . . . T-35 handles loads up to 12,000 lbs. Power up and power down boom hoist standard equipment at no extra cost.

YARD HANDLING up to 10,000 lbs. with crawler and 12,000 with truck mounted Bantam easily spots materials for storage, loads and unloads trucks.

SB-AC-1

Versatile BANTAM mounts on All-New Crane Carrier, Crawler or Re-built truck, or one of your presently owned tandem-axle trucks. Investigate the BANTAM Method . . . make your machinery dollars go further. Write for free literature TODAY!

SCHIELD Bantam®

COMPANY • 234 PARK ST., WAVERLY, IOWA, U.S.A.

WORLD'S LARGEST PRODUCERS OF TRUCK-CRANES AND EXCAVATORS

More Literature

Write directly to the manufacturers or use coupon on page 30

Dependable Diesel and Dual-Fuel Engines

157 This company manufactures diesel and dual-fuel engines in 5 to 12 cylinders, with net hp ranging from 2,250 to 5,450. Also turbocharged diesels, with 6 or 8 cylinders, developing 620 to 1,750 hp, at 514 to 625 rpm. Get literature from the HAMILTON DIV., BALDWIN - LIMA - HAMILTON, HAMILTON, OHIO.

Meters Aid in Water Conservation

158 Water is vital and should be measured accurately. Installation of Badger meters provides an accurate check of water usage and water waste, helping the community to conserve its water supply. The BADGER METER MFG. CO.,, MILWAUKEE 45, WIS., will furnish full information.

Marks Traffic Lines Inexpensively

159 Using the new Model 6-18 line marker, every city can mark its traffic lines at low cost, says this manufacturer. The unit handles regular or reflective painting jobs, traveling at speeds of from 3 to 5 miles an hour. It features a 6-hp engine, and an 18-gallon A.S.M.E. approved tank. Address the MEILI-BLUMBERG CORP., NEW HOLSTEIN, WIS.

No Clogging With These Sewage Pumps

160 Large solids will pass through these centrifugal pumps without clogging. So will long, stringy, fibrous materials. Installed in your sewage-disposal plant, Morris pumps are easy to maintain; simple to dismantle. MORRIS MACHINE WORKS, BALDWINSVILLE, N. Y., makes horizontal and vertical units in sizes ranging from 3 to 20 inches, that are adaptable to all types of drives.

Provides Adequate Emergency Power

161 *Power Points Digest, Volume* 10, *No.* 1, describes the numerous standby and mobile applications of Onan's Model CW electric generating plant, explaining how the unit operates when regular power fails. For your copy, write D. W. ONAN & SONS, INC., 8361 UNIVERSITY AVE. S.E., MINNEAPOLIS 14, MINN.

This Heavy-Duty Truck Ideal for City Work

162 Can your city use a big, rugged truck, combining the power of an elephant with the agility of an acrobat? Then learn the latest about the new FWD Fourmaster. Its functional styling, permitting quick, simple mounting of snow plows, underbody blades and other equipment give it convenience that your crews will really appreciate. Its power in all four wheels permits it to carry loads in places where other equipment couldn't move, even when empty. Get the full story from THE FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.

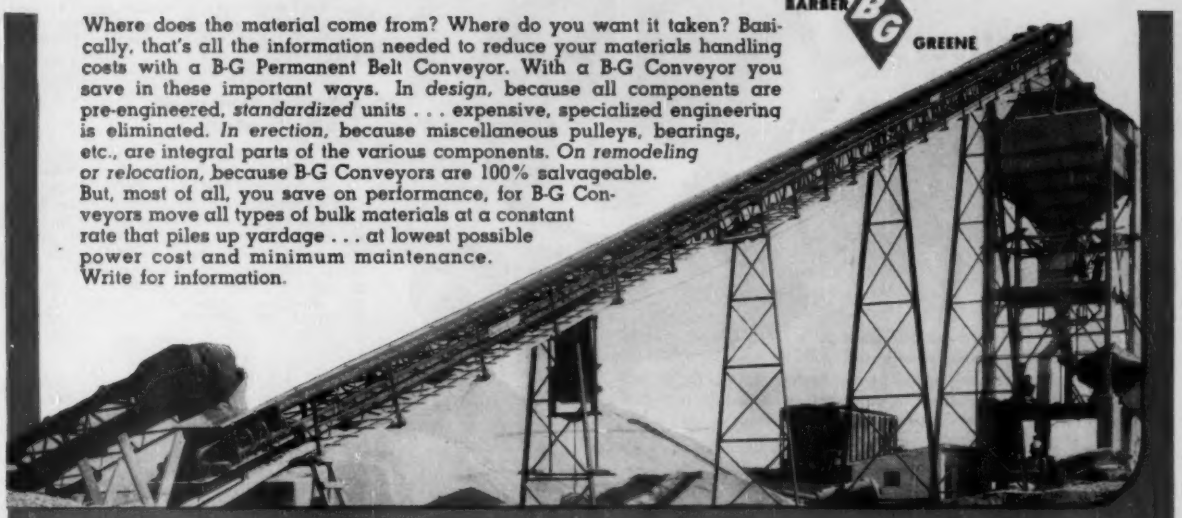
(See page 40 for more Bulletins)

HOW YOU SAVE MONEY

.. WITH STANDARDIZED PERMANENT CONVEYORS

BARBER BG GREENE

Where does the material come from? Where do you want it taken? Basically, that's all the information needed to reduce your materials handling costs with a B-G Permanent Belt Conveyor. With a B-G Conveyor you save in these important ways. In *design*, because all components are pre-engineered, *standardized* units . . . expensive, specialized engineering is eliminated. *In erection*, because miscellaneous pulleys, bearings, etc., are integral parts of the various components. *On remodeling or relocation*, because B-G Conveyors are 100% salvageable. But, most of all, you save on performance, for B-G Conveyors move all types of bulk materials at a constant rate that piles up yardage . . . at lowest possible power cost and minimum maintenance. Write for information.



. . . WITH HEAVY-DUTY PORTABLE CONVEYORS

When materials handling calls for a heavy-duty portable conveyor, B-G has the answer, too. Here is the heavy-duty, pneumatic-tired Model 374 available with belt widths of 18", 24" and 30", in lengths of 30' to 60'. The 374 will handle any bulk material—sand, stone, wet concrete, coal—at capacities from 150 to over 425 tons per hour . . . with a single operator. Every aggregate producer, contractor, city, county and state highway department will want full information on the B-G Model 374 Heavy-Duty Portable Belt Conveyor.

B-G CONVEYORS . . . REDUCE COSTS, SPEED WORK AROUND THE WORLD

Barber-Greene

BG

Aurora, Illinois, U. S. A.

the latest unit in a proven line of... PHOTOELECTRIC CONTROLS for street lighting

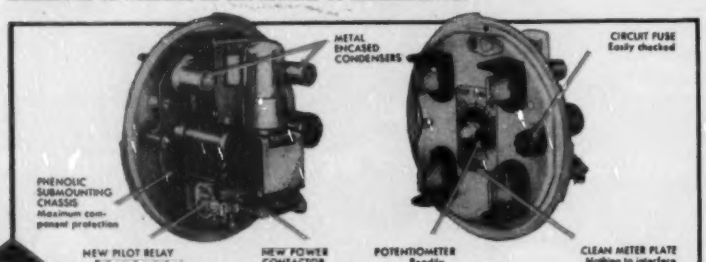
The new improved F-P Control 63300C is the result of eight years of practical experience in photoelectric control for street lighting. Developed in conjunction with leading utility engineers, the new unit provides:

ACCESSIBILITY — The potentiometer is easily adjusted and the circuit fuse quickly changed without removing the meter glass. All major components are readily accessible.

SWITCHING CAPACITY — A SPDT double break power contactor is built into the control chassis. The normally closed contacts energize a lighting load at night up to 3000 watts. The normally open contacts energize a load during daytime up to 2000 watts. These ratings apply to incandescent, mercury or sodium vapor lamps.

PROTECTION — The F-P Series 63300C Control is conservatively rated 3000 volts RMS hipot between any part of the circuit and ground. In the event of functional failure of the circuit, the controlled lighting load will remain on.

HIGHEST QUALITY components are used throughout. All tubes are preaged and tested to give a nominal life of over 20,000 burning hours. All other components have much longer life. Fisher-Pierce Photoelectric Controls have been proven reliable by the experience of hundreds of utilities in thousands of installations.


METAL ENCASED CONDENSERS
CIRCUIT FUSE Easily checked
PHENOLIC SUBMOUNTING CHASSIS Maximum component protection
NEW PILOT RELAY Balanced armature construction
NEW POWER CONTACTOR Night load energized on normally closed contact.
POTENTIOMETER Readily accessible
CLEAN METER PLATE Nothing to interfere with external wiring

FP

Write for Catalog.

The FISHER-PIERCE CO., Inc.

94 Pearl St., So. Braintree, Boston 85, Mass.

EXPORT: PHILIPS EXPORT CORP. 100 E. 42nd STREET NEW YORK 17, N.Y.

IN CANADA: NORTHERN ELECTRIC CO., Ltd.

More Literature

Write directly to the manufacturers or use coupon on page 30

Trees and Plants Stay Healthy

163 There are many different types of pest-control equipment available, in an assortment of sizes, for a variety of jobs. One sprayer helps the park official protect his trees against insects; another aids in warding off plant diseases; and still others are used to regulate weed killers. A full description of the most advanced pest-control equipment is contained in a new catalog available from THE HARDIE MFG. CO., HUDSON, MICH.

A Sound System of Traffic Control

164 City engineers interested in more effective traffic control, are asked to send for the 36-page *Trafficone System of Traffic Control Manual.* This Manual, along with other literature, illustrates correct traffic-control techniques using red, yellow and black trafficones for 24-hour visibility. It emphasizes the need to guide, rather than confuse the motorist. Request copies from INTERSTATE RUBBER PRODUCTS CORP., 908 AVILA ST., DEPT. 115, LOS ANGELES 12, CALIF.

One Tractor Performs Many Maintenance Jobs

165 Some 21 tools are available with this 5-hp tractor, enabling it to care for public lawns and to handle many other municipal maintenance jobs. Gravely tractors have an all-gear drive and power reverse, and are described in detail in the new booklet *Power vs. Drudgery.* For your copy, write GRAVELY TRACTORS, INC., BOX 1273, DUNBAR, W. VA.

Public Swimming Pools Need These Filters

166 An informative, new folder brings you a full description of diatomite filters, and discusses their use in community-operated swimming pools. Using a minimum of floor space, the filters offered by this company assure clearer and better water. They have been accepted by many State Health Departments throughout the country. For your copy, write the GENERAL FILTER CO., AMES, IOWA.

New Process Combats Corrosion

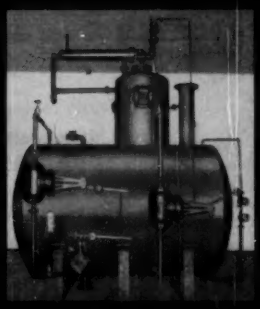
167 This company details the difference between cathodic and anodic coatings, "must" data for officials concerned with the protection of water tanks, fences, and other metal structures. It offers pointers on the selection of a proper metallic coating, ofttimes specifying Galvicon, a new cold galvanizing compound that may be applied by brush, spray or dip method. A copy of *Vol. No. 452* may be obtained by writing the CHEMICAL DIV., GALVICON CORP., 40 W. 29th ST., NEW YORK 1, N. Y.

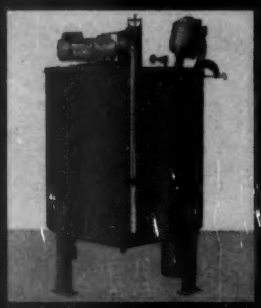
For Sanitary Street Flushing

168 *Bulletin 7-ST-11* describes an odorless sanitary cleaner for septic tanks and cesspools, street flushing, and fire emergency. According to THE GORMAN-RUPP CO., MANSFIELD, OHIO, the new cleaners do an efficient job in less time. Moreover, they comply with, ofttimes exceeding, a community's health regulations. Copies of the new bulletin are available from the company on request.

what's the cost in the long run?

There's no dodging the question today. High costs and low budgets demand straight answers. The installation of water conditioning equipment is an important step that merits the careful consideration of every factor involved. Modern General Filter water conditioning installations are designed with a practical eye on original equipment and installation costs. Equally important, however, is the extent of continuing service available from the company with which you are dealing. General Filter's staff of highly trained engineers and chemists are at your call on a moment's notice. General Filter's 40 branches are located across the country to give you prompt dependable service. Make your own comparisons and you will join the hundreds of General Filter water treatment plants that are enjoying lower first cost — lower operating costs — lower maintenance costs.





General Filter Company
AMES, IOWA
... better water

write for these FREE booklets today!

GENERAL FILTER COMPANY
AMES, IOWA

Gentlemen: Please send us further information on the subjects checked below:

- ☐ AERATORS
- ☐ FILTERS
- ☐ TASTE AND ODOR
- ☐ ALKALINITY CONTROL
- ☐ HIGH CAPACITY RESINOUS ZEOLITE
- ☐ IRON RUST REMOVAL
- ☐ DEMINERALIZATION
- ☐ SOFTENERS
- ☐ HAVE ENGINEER CALL
- ☐ _____

NAME _____ TITLE _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Rugged digging strength as a shovel, extra lift capacity as a crane, make this Koehring heavy-duty ½-yard 205 ideal for the tough job assignments of city work. Deep-section, 16-foot shovel boom with husky 12 ft.-2 in. dipper stick provides a wide work range for shovel operation. When your schedule calls for sewers or water main excavations, this ½-yard handyman is readily converted to hoe — digs 17 feet-9 in. below tracks. As a heavy lift crane it has a load capacity up to 15 tons on rubber or 10 tons on crawlers — converts to dragline, clamshell, pile driver as your work requires.

Behind the 205's big work capacity are many operating advantages — trigger-quick, push-button dipper trip on swing lever for fast shovel dumping; full-revolving fairlead on dragline; power-boom lowering for crane.

Big automatic traction brakes can be applied at any time, with cab in any position — an important safety feature when working on grades. All main clutches are self adjusting — maintain full operating efficiency at all times. For more complete details on this heavy-duty 205 on crawlers or rubber, see your Koehring distributor or write us. Ask, too, about larger sizes of Koehring excavators — dipper capacities up to 2½ yards — and heavy-duty cranes, with lift capacities up to 79½ tons.

KOEHRING HEAVY DUTY

KOEHRING COMPANY • MILWAUKEE 16, WIS.

SUBSIDIARIES: JOHNSON • PARSONS • KWIK-MIX

KOEHRING MUD-JACK® offers you an inexpensive method of stabilizing sub-grades under sunken sidewalks, curbs, gutters, driveways, street slabs. Send for 20-page engineering handbook. Write: **Koehring Company, Milwaukee 16, Wis.**

NAME_____

ADDRESS_____

CITY, STATE_____ CK378REV.AC

12.6 m.p.h. TRENCHMOBILE®

Maintaining fast "work-and-run" schedules on scattered city trenching jobs, Parsons rubber-tired Trenchmobile drives anywhere around town at 12.6 m.p.h. Automotive steering and truck-type hydraulic brakes take you safely through main street traffic . . . no round-about detours necessary . . . no waiting for trailer, loading or unloading delays. A job 6 miles away can be started in less than 30 minutes from "now".

Trenchmobile gives you low-cost, one-man trenching on gas and water mains, extensions, house-to-street service connections . . . digs up to 14½ feet of trench per minute in 8 to 16-inch widths, and depths to 5 feet. Sloping ladder boom, with positive down-crowd, undercuts sidewalks, curbs, gutters, mains . . . makes vertical set-ins, saves hand clean-up. Also check advantages of easy-in, easy-out "Tap-In" teeth, shiftable belt conveyor, optional backfill blade. Get all the facts in new Trenchmobile bulletin. Other Parsons Trenchliners®: 5 larger sizes, ladder and wheel-types, full crawler mounted.

PARSONS
COMPANY • NEWTON, IOWA
KOEHRING SUBSIDIARY

One-Man BITUMINOUS MIX PLANT

HERE is a versatile, fast-batching bituminous mixer that fits any production problem, sets up anywhere for economical one-man handling. Kwik-Mix 10 and 14 cu. ft. sizes are readily adaptable as stationary overhead plants. Single operator controls charging, mixing and discharging without leaving platform. Skip, receiving aggregates from truck at ground level, is raised by power up an extension track to charge drum. Pug-mill mixing action, uniform oil distribution, and accurate temperature control, assure even-texture mix every batch. With non-tilting drum and 7-second discharge, operator easily loads mixed batch into trucks. As portable units mounted on pneumatic tires, these mixers handle direct pouring on patch work, load wheelbarrows, or discharge to conveyor belt for stockpiling. Special tower loader attachment also lets you load directly into trucks from ground level. Your Kwik-Mix distributor can show you many more cost-cutting ideas. See him, or write us now for catalog.

KWIK-MIX
COMPANY • MILWAUKEE, WIS.
KOEHRING SUBSIDIARY

"FAMOUS NAME"

To Francis Scott Key, composer of our national anthem, Frederick, Maryland was home. There he practiced law; there he is buried. On U.S. Route 40, where it passes through Frederick, a modern hotel honors the patriot's famous name.

In many interesting locations you'll find ***FERRO*** signs . . . visible day or night; permanent porcelain enamel fused on finest steel.

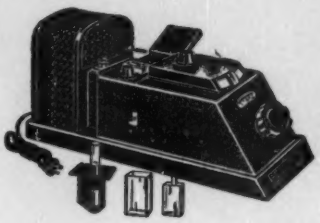
On any street, road or highway, ***FERRO is the sign of good government.*** For full details, write:

FERRO ENAMELING CO.

1100 Fifty-Seventh Avenue Oakland 21, California

KLETT SUMMERSON
ELECTRIC PHOTOMETER

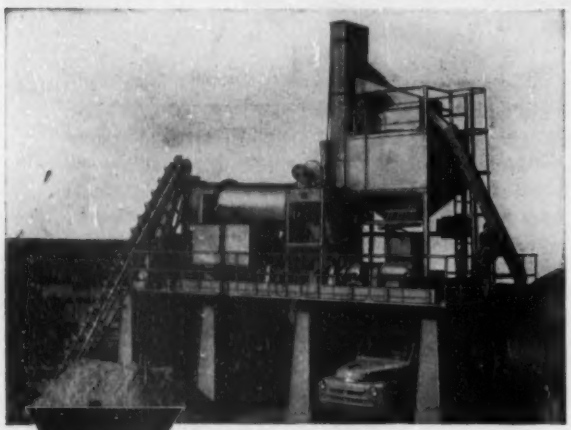
Adaptable for Use in Water Analysis



Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

KLETT MANUFACTURING CO.

179 East 87th Street New York, N. Y.



WHITE ASPHALT PLANTS FOR HOT-MIX PAVING

These reasonably-priced stationary hot plants are complete on one steel frame, for easy moving to a new location. Excellent for medium-size city paving jobs; for street and highway maintenance; and for paving driveways, alleys, sidewalks or industrial plant areas.

Oil-fired rotary dryer, batch mixer, vibrating screen, divided hot bin, dust collector, volumetric or weigh scales, engine or electric power, air controls.

Model L-12, 12-15 tons per hour; Model L-25, 25-30 tons per hour. Portable units also available

For FREE circular, write—

ELKHART 1 White Mfg. Co. INDIANA

Handiest Location in PITTSBURGH

Hotel Pittsburgher
PITTSBURGH, PA.
Diamond Street below Grant

Right in the heart of the Golden Triangle

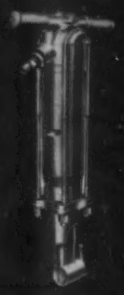
Make the Pittsburgher your stopping place on every trip. Business or pleasure, it's your best address in town . . . easily reached from major highways. 400 outside rooms, radio and TV at no extra charge, bath and circulating ice water. Air conditioned dining rooms, function rooms, and sleeping rooms. Garage service.

a Knott Hotel

ATlantic 1-6970 JOSEPH F. DUDDY, MANAGER

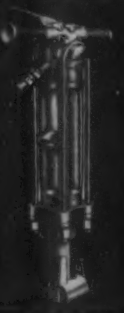
JOY PAVING BREAKERS

. . . WHEN DEMOLITION IS YOUR AIM!



K-89 **SUPER HEAVYWEIGHT** This 90 lb. bruiser will knock the starch out of those tough, heavily reinforced concrete sections.

K-81 **HEAVYWEIGHT** Strikes faster, heavier blows than comparable breakers. Is easier to hold and operate. Raps right through the toughest jobs.



K-61 **MEDIUM WEIGHT** A hard-hitting but very easy-handling Breaker designed for thin-section concrete and other average demolition jobs.

THE THRIFTY JOY DUAL-VALVE

MAKES AIR DO MORE WORK!

Permits higher drilling speeds with lower air consumption. Effectively lowers drilling costs.

Joy Paving Breakers are cadmium-plated *inside and out*—and you know what that means. The cadmium stops rust and corrosion, prevents scoring, and speeds up the running-in of the new tool. Lubrication is controlled by the throttle. Each movement actuates a mechanism which shoots the proper amount of oil to all working parts.

You've a dual-purpose tool with a Joy Breaker, too. Swap the chuck housing for a driving shoe and guide, and . . . PRESTO . . . you're holding the world's finest Sheeting Driver!

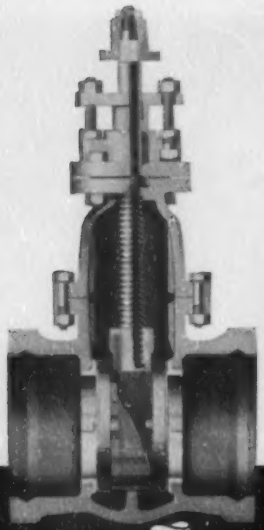
Joy Breakers offer less jarring and operator fatigue . . . less maintenance and replacement. Interchangeability of parts allows a smaller parts inventory. ● Descriptive bulletins tell all. Write ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

Consult a Joy Engineer

JOY

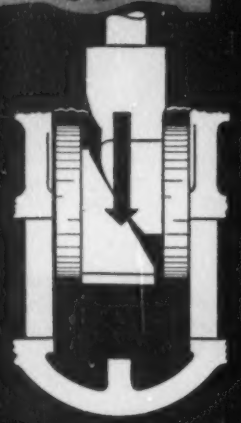
CONSTRUCTION EQUIPMENT MANUFACTURERS FOR OVER HALF A CENTURY

WAD C 4602

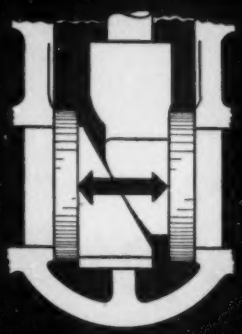


Look how you gain LONGER, TROUBLE-FREE VALVE LIFE

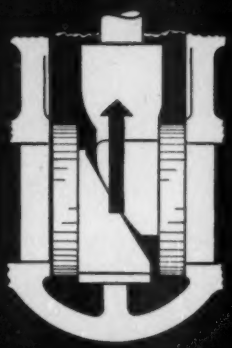
with Darling revolving disc gate valves*



DESCENDING. Fully revolving discs, independently hung, change seating position at each closing, assuring uniform wear distribution for prolonged service. Plain "no pocket" discs are interchangeable for *extra* life!



CLOSED. Faces of upper wedge are radiused and faces of both wedges are transversely beveled for equalized wedging pressure and *tight closing despite valve body distortion.*



RISING. Wedging pressure on both discs is released before discs start to rise. Complete absence of wedging pressure during travel of discs assures easy operation, tight closing and greatly prolonged valve life!

***DARLING REVOLVING DISC GATE VALVES FOR EVERY NEED.**

These unique Darling valves are available in a broad range of sizes and types, manually or motor operated, for all normal or unusual services. Before you invest in *any* valves, find out what you stand to gain by using the proper Darling valves on your job. Simply outline your service needs for specific data . . . or . . .

ASK FOR BULLETIN No. 5002

DARLING VALVE & MANUFACTURING CO.

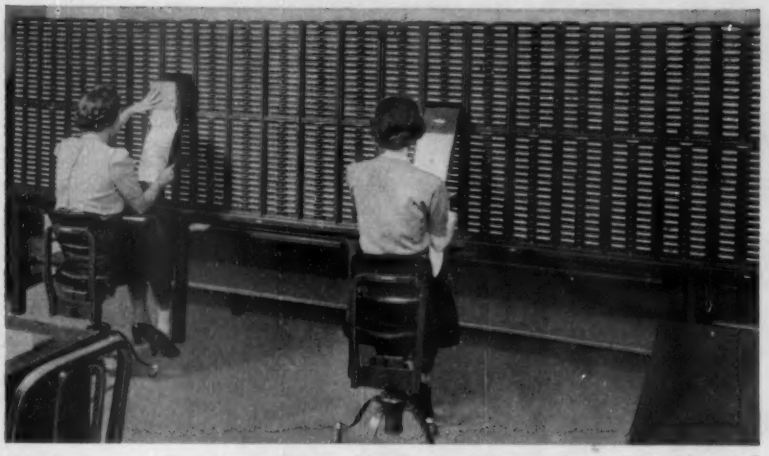
Williamsport 10, Pa.

Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd., Brantford 7, Ontario

FOR PLUS VALUES, JOB-PROVED AGAIN AND AGAIN

Remington Rand Methods News

State Government Streamlines Purchasing With New Procurement Catalog



Kardex Visible System similar to that illustrated provides information and control over all items bought for use by the State agencies.

The centralized purchasing organization of one of our largest States handles procurement of equipment, materials and supplies used by its public agencies ... representing an outlay of over $25,000,000 annually... for using points scattered all over the State. Need was felt for a workable Commodity Classification program streamlining the entire purchasing operation.

Remington Rand Business Services Departments were called in, and after careful analysis, worked out a Commodity Classification program and prepared a procurement Catalog which simplified purchasing.

Big Savings

In buying alone, since operating on the newly established standards, as much as 10% to 15% is saved. And in the elimination of lost motion and clerical time in the various agencies of the State, the savings are enormous. Naturally, the cost of the new system was quickly recovered. By the establishment of ordering deadlines and by consolidating orders for various products, the new system helps the entire purchasing department to cut costs and stay within its budget.

What The System Provides

Here are a few of the many things this Commodity Classification and Cataloging provide:

1) Positive identification and full description of each item requisitioned. Accuracy.
2) An orderly means of distributing work among buying specialists throughout the State.
3) Uniformity of terminology throughout the entire procurement system.
4) Abbreviated but precise method of requisitioning.
5) Uniform base for inventory and stores records.
6) Means for simplifying the scheduling and consolidation of purchases.

Over 80,000 Items

The new complete catalogs list over 80,000 items, with descriptions and instructions sufficiently complete for procurement purposes. They consist of approximately 3000 pages, in loose-leaf form. The sheets are 9 x 12 printed both sides. It makes a book 6 inches thick, in Remington Rand's exclusive fourpost TRI-LOCK binders that open at any point to a flat reference position automatically and stay open without holding.

Approximately 3000 Remington Rand Plastiplates, typed by the Business Services Departments, were supplied the State. From these the pages of the finished catalogs were reproduced.

Get the full story of how the purchasing procedures of this great State were simplified and streamlined. These same services can be utilized by your state, county or municipal governmental units to effect similar savings and far-reaching benefits for all concerned. Ask for **CR878** today.

A Typical Procurement Catalog. Despite its bulk, the catalog is convenient for desk reference.

Remington Rand

Room 1902, 315 Fourth Ave., New York 10

Kindly send CR878

Name_____

Title_____

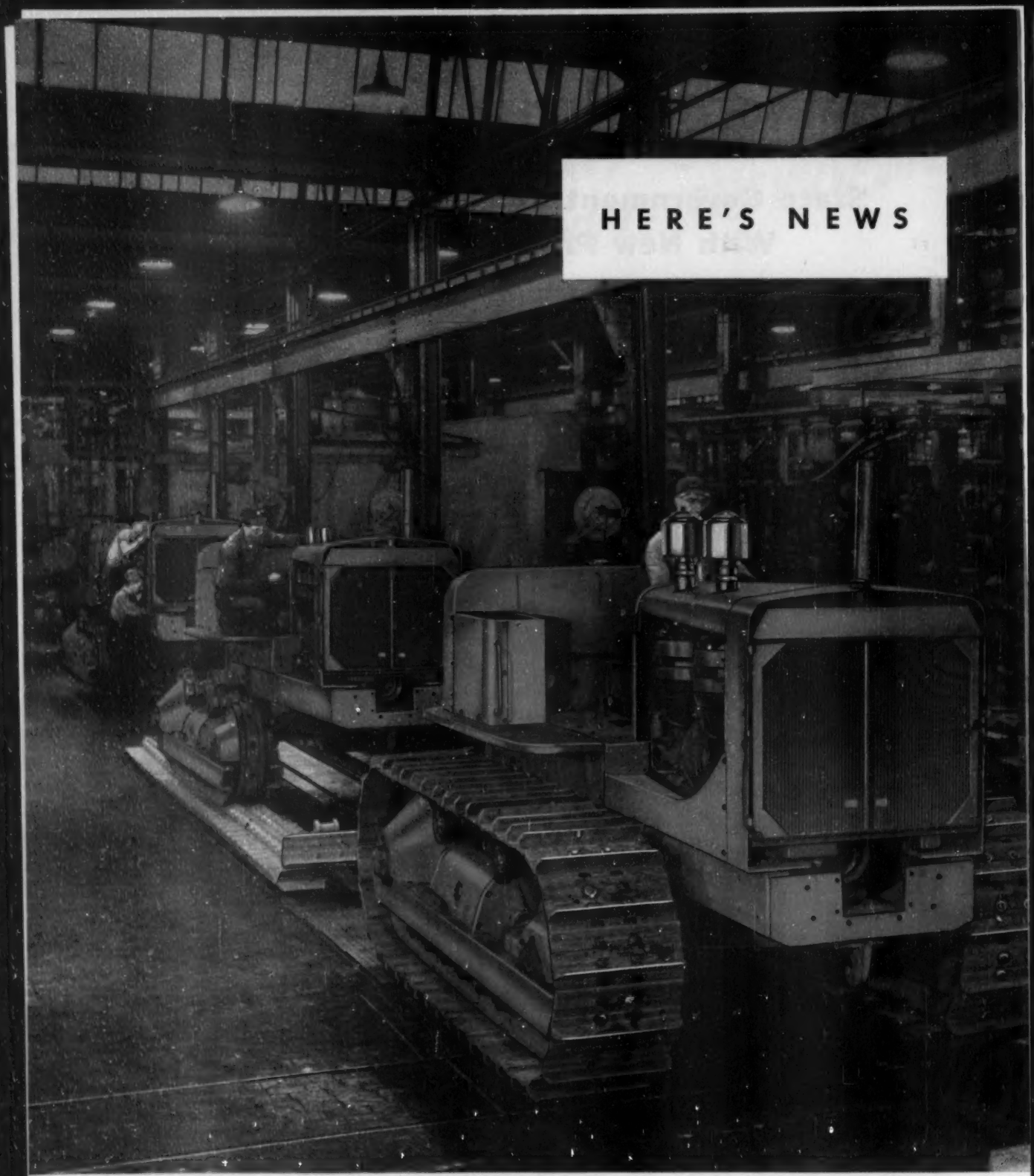
Company_____

Address_____

City_____ Zone____ State_____

G-8

– Profit-Building **IDEAS** For Business –



They're here now! **28,000-lb. HD-15's with torque converter drive are already rolling off the assembly line.**

Allis-Chalmers Powerful HD-15 adds to its big work advantages

. . . now offers choice of two outstanding drives— standard transmission with time-saving shift pattern, or widely accepted hydraulic torque converter drive

From its introduction, the Allis-Chalmers HD-15 has set new standards in performance and long-life service . . . in a new size class. It combines outstanding strength and balance with plenty of power, plus a simplified, time-saving transmission that gives big work output. In addition, the HD-15 offers remarkable service simplicity, with features like unit assembly and 1,000-hour lubrication intervals for truck wheels, idlers, and support rollers. It has proved itself the kind of tractor required on today's jobs.

Now, hydraulic torque converter drive is added as optional equipment — an additional working advantage for the powerful HD-15. This advanced design drive was introduced by Allis-Chalmers in the world's *first* torque converter tractor nine years ago. This modern drive gets more done because it automatically provides the right combination of speed and pull every working minute . . . and hydraulic cushioning assures longer life for both tractor and auxiliary equipment.

Now you can choose the HD-15 with standard transmission *or* hydraulic torque converter drive. Either way you'll be getting the most advanced tractor in the business. Let your Allis-Chalmers dealer give you *all* the reasons why.

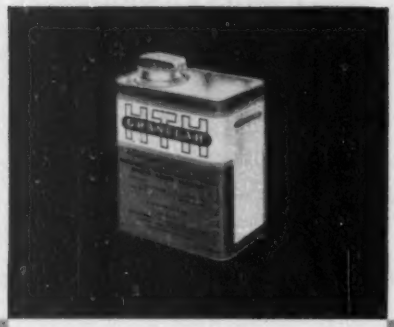
ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

TORQUE CONVERTER

Symbol of greater output, longer life.

A DEPENDABLE SANITATION PROGRAM STARTS WITH HTH PRODUCTS

REG. U. S. PAT. OFF.



HTH GRANULAR—For continuous chlorination, algae and slime control, and emergency chlorination, HTH Granular provides a convenient, economical source of chlorine. It has a record of proved performance over 25 years. HTH Granular contains 70% available chlorine; it is packaged in 100-lb. drums and in cases of nine 5-lb. cans.

HTH TABLETS—Containing 70% available chlorine, HTH Tablets dissolve slowly over a long period of time and provide a slow, steady source of available chlorine. They are ideally suited for hand feeding in such applications as sanitizing new water mains. HTH Tablets are packed in 100-lb. drums and in cases of six 7½-lb. cans.

HTH TABLET HYPOCHLORINATION—For accurate metering and feeding of hypochlorite solutions, HTH Tablets and the HTH Tablet Hypochlorinator provide a low-cost method that offers you new convenience and dependability. It is applicable to water, sewage, and industrial wastes treatment as well as to pool chlorination.

For complete information and descriptive literature call your Mathieson HTH distributor or write today.

MATHIESON

MATHIESON CHEMICAL CORPORATION
Mathieson Industrial Chemicals Division
Baltimore 3, Maryland

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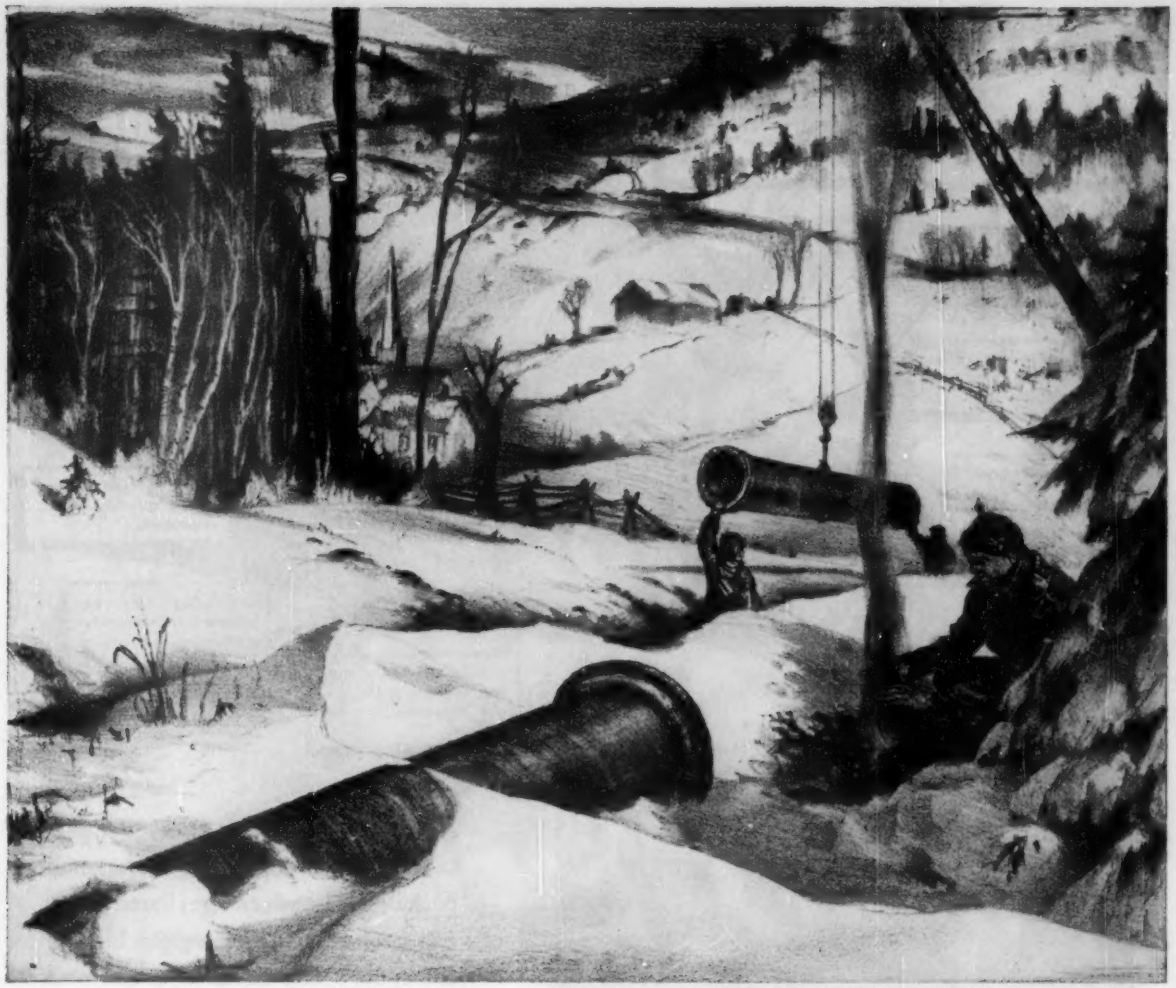


Lithographed on stone for U. S. Pipe and Foundry Co. by John A. Noble, A. N. A.

WINTER OR SUMMER, in the hills or on the flats, make no difference to cast iron pipe. Whether it is used for a water supply line, a gas feeder main or a pressure sewer, cast iron pipe has a rich history of highly satisfactory performance behind it for each type of service.

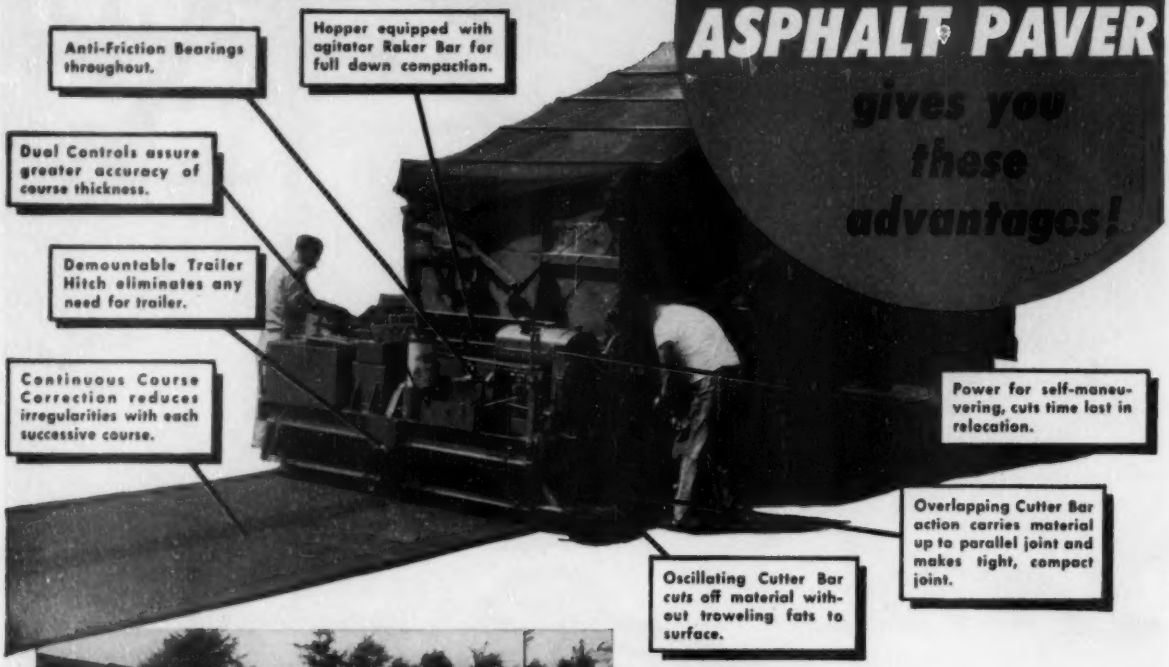
U. S. pipe centrifugally cast in metal molds up to 24-inch, pit cast pipe in the larger sizes and fittings are made in accordance with Federal, American Standard and American Water Works Association specifications wheresoever they apply.

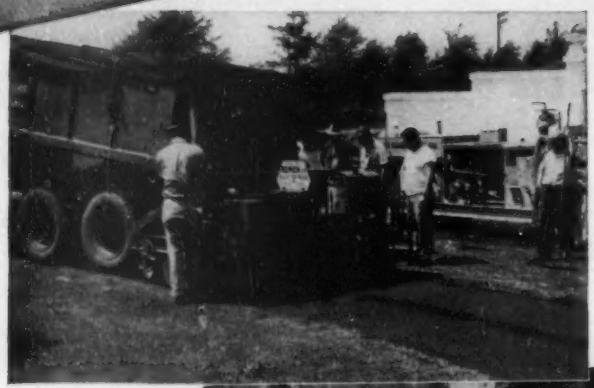
With our production distributed in five strategically located plants, we are in an excellent position to meet your requirements.

United States Pipe and Foundry Co.,
General Office, 3300 First Ave., N. • Birmingham 2, Ala.
Plants and Sales Offices Throughout the U.S.A.

U.S.
cast iron
PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

NO OTHER SMALL TOW TYPE ASPHALT PAVER gives you these advantages!


Anti-Friction Bearings throughout.
Hopper equipped with agitator Raker Bar for full down compaction.
Dual Controls assure greater accuracy of course thickness.
Demountable Trailer Hitch eliminates any need for trailer.
Continuous Course Correction reduces irregularities with each successive course.
Power for self-maneuvering, cuts time lost in relocation.
Overlapping Cutter Bar action carries material up to parallel joint and makes tight, compact joint.
Oscillating Cutter Bar cuts off material without troweling fats to surface.



PUTTING DOWN ROADWAY IN A LARGE CHICAGO CEMETERY.

LAYING A PARKING LOT IN NEW JERSEY

HERE, for the first time, is a precision Black Top Paver in a small package! The advantages listed above can be had in no other machine of this type. These advantages combine to give you a better job on those parking lot, driveway and playground contracts. They mean faster spreading, less time lost in relocation and greater accuracy of control. Look over these and the other Adnun advantages. Ask for details and plan on the new Adnun Jr. Model 8 for non-specification work.

ADNUN JR MODEL 8 BLACK TOP PAVER

BLAW-KNOX COMPANY
FOOTE CONSTRUCTION EQUIPMENT DIVISION
190 State Street,
NUNDA, NEW YORK

BLAW-KNOX

Count the Jobs You can do...

with a FORD Tractor and Dearborn Equipment

Here's a low cost power unit with the right capacity to handle a wide range of jobs that are too big for hand labor, yet too small to justify the use of heavier equipment.

POWER FOR MORE JOBS

There's almost no end to the jobs the Ford Tractor can be equipped to do economically. One day you can use it for loading, lifting or grading. The next day you can use it for ditching or digging. It does a fast, clean job of mowing in the summer . . . keeps streets and parking lots clear of snow all winter long. Dearborn Equipment to handle these and other jobs attaches quickly and easily.

The Ford Tractor is so highly maneuverable, too. It speeds from one job to another—needs no trailer for transportation. And attached equipment rides on the tractor—operates hydraulically at the touch of a finger.

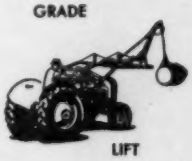
POWER THAT COSTS LESS

For all it has and for all it can do, the Ford Tractor is priced surprisingly low. You get lower operating cost, too . . . Ford's low friction engine saves on gas, oil and upkeep expense. Find out soon how the dollars you invest can buy more in a Ford Tractor and Dearborn Equipment. See this team work *on your own jobs*, without obligation. See your local Ford Tractor Dealer or write to the address below.

TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan

MOW

GRADE


LIFT

REMOVE SNOW

Ford TRACTOR

THIS IS THE PAVER FOR YOU!

OVERMAN'S STONE AND BITUMINOUS SPREADER

. . . has all you want in a paving machine.

CONVENIENCE . . . lays any material . . . will do all your jobs, large or small. Easily maneuvered on small driveways, lots, etc. Quickly moved by towing with truck at regular road speeds.

ADJUSTABLE . . . divided screed gives either crown, inverted crown or level pavement. Lays any width strip with perfect match to adjoining strip.

SPEED . . . lays up to 8 tons in 30 seconds.

TOP QUALITY PRODUCTION . . . dual vibrator gives free flowing action of material direct from hopper to pavement. No conveyors or screws to delay delivery and cool hot mixes. Smooth level surface, uniform density and firm compaction assured.

LOW COST . . . Both first cost and operating cost lower than most other pavers.

Yes, this IS the paver for you!

Write for full information today.

I. J. Overman Mfg. Co.
BOX 203 MARION, IND.

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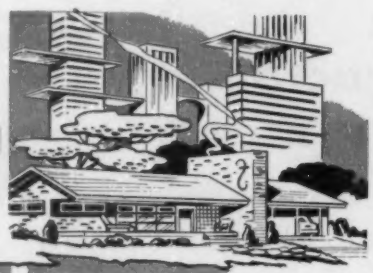
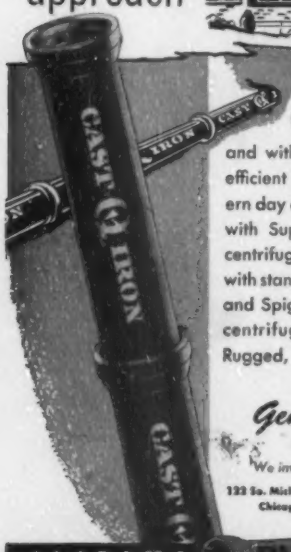
the **MODERN** approach





Cast iron pipe centrifugally cast and with mechanical joints is the most efficient and economical means of modern day distribution. Serving the industry with Super de Lavaud cast iron pipe centrifugally cast in modern long lengths with standardized Mechanical Joints, Bell and Spigot or Flanged, with or without centrifugally applied cement lining. Rugged, dependable and economical.

General Sales Offices
ANNISTON, ALABAMA
We invite inquiries to our nearest sales office
133 So. Michigan Avenue, Chicago 3, Ill.
350 Fifth Avenue, New York 1, New York

ALABAMA PIPE COMPANY
ANNISTON ALABAMA

Newest, Most Beautiful Hotel in **MIAMI**

The ultimate in modern design for luxurious living. All rooms have individually controlled air-conditioning, radio, circulating ice water.

Combination sleeping and sample rooms. Sales meeting rooms and convention facilities available.

Convenient to shopping, night clubs, air line terminal, fishing and all activities. Write us today.

WILLIAM F. USHER, MANAGER

BISCAYNE *terrace* **HOTEL**

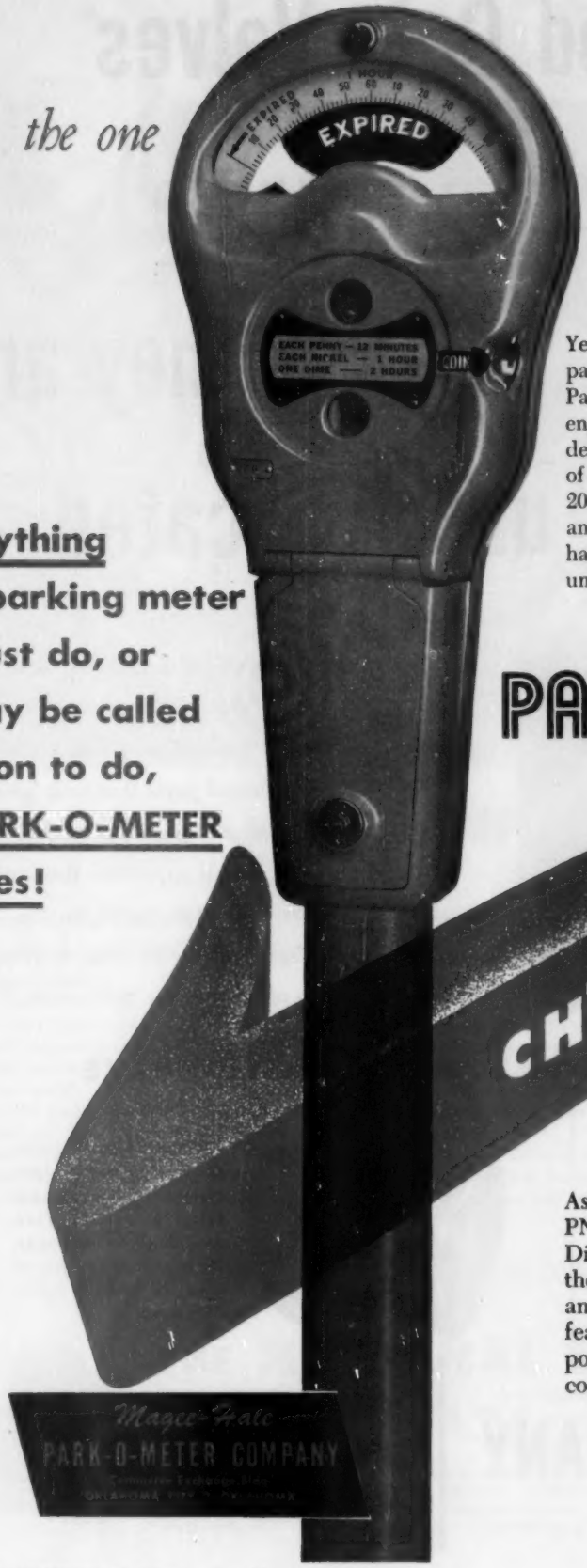
340 BISCAYNE BLVD.
MIAMI, FLORIDA

the one

parking meter that meets every operation requirement

Years before the world's first parking meter installation in July, 1935, Park-O-Meter engineers were engaged in a program of design and development to provide a system of superior quality. Through more than 20 years of continuing improvement and refinement, Park-O-Meter has been able to attain and maintain undisputed leadership in the field.

anything a parking meter must do, or may be called upon to do, PARK-O-METER does!

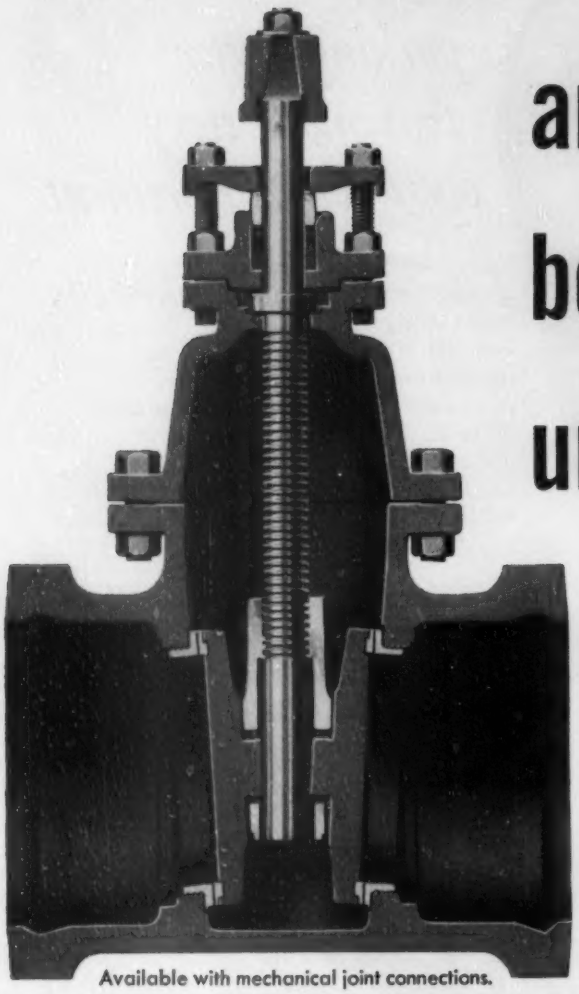


PARK-O-METER

CHECKS 100%!

Ask about Park-O-Meter's latest PND feature: Pennies, Nickels and Dimes . . . all three coins through the single slot in any combination for any time limit. Learn how this new feature, coupled with Park-O-Meter's positive automatic action, reduces costs and increases net revenue.

R. D. Wood Gate Valves are reliable because they are uncomplicated

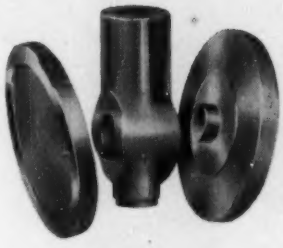


Available with mechanical joint connections.

There's a sort of reverse English to designing R. D. Wood Gate Valves. The point is to make them as simple as possible, to eliminate all the ingeniously complicated parts that look good in the blueprint but cause operating failures deep down in the lines. You'll appreciate their rugged simplicity when you put them to the test. R. D. Wood Gate Valves are built to function for generations of trouble-free flow control.

FEATURES OF THE R. D. WOOD GATE VALVE

Internal mechanism comprises only three parts—the spreader and two discs. Usual small wedges and delicate parts are avoided. Fully opened valve provides unobstructed passage for full pipe capacity.



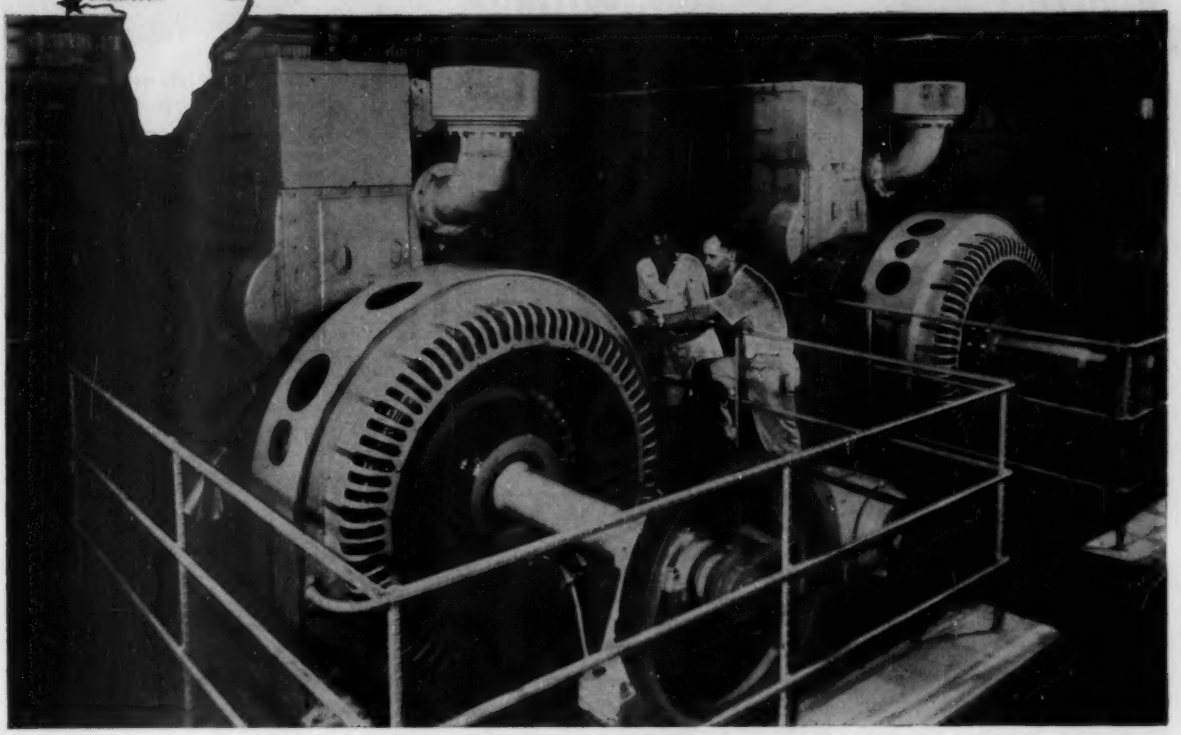
Rising or descending, discs are free to revolve completely. In closing, discs are fully lowered before spreading action begins. Wear on bronze faces of discs and seats is evenly distributed.

R. D. WOOD COMPANY

Public Ledger Building, Independence Square
Philadelphia 5, Pa.

Manufacturers of Mathews Hydrants and "Sand-Spun" Pipe (centrifugally cast in sand molds)

Monrovia, Africa, doubles generating capacity



. . . with a 4th SUPERIOR DIESEL

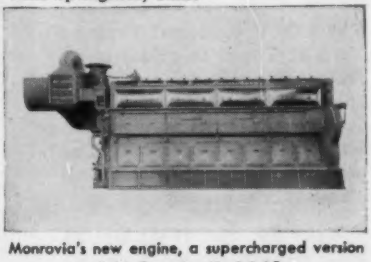
. . . economical records of first 3 make new SUPERIOR a natural choice

There's a new Superior Diesel in Monrovia, and the extra power it provides doubles the generating capacity of this Liberian port city's power plant.

Since 1950, three other Superior Diesels, each rated at 625 h.p., have produced dependable and economical power for this area. Their record of outstanding performance is the reason why the Monrovia Port Management Company selected the new Superior, rated at 1765 h.p., to meet growing municipal power demands.

Monrovia is just one example of the hundreds of cities throughout the world which rely on Superior and Atlas power for economical lighting, sewage plant and water pumping operations. Superior and Atlas Diesels have earned such widespread acceptance because they deliver efficiently and dependably under load.

You can easily get additional proof of the stamina and efficiency of Superior and Atlas Engines—just contact any one of the Engine Division offices listed below or write Springfield, Ohio.



Monrovia's new engine, a supercharged version of this Superior Model 65.

DIESEL DUAL FUEL GAS — THE NATIONAL SUPPLY COMPANY — ATLAS Imperial DIESEL ENGINES — Superior ENGINES — DISTRIBUTOR OF Lister DIESELS IN U.S.A.

THE NATIONAL SUPPLY COMPANY

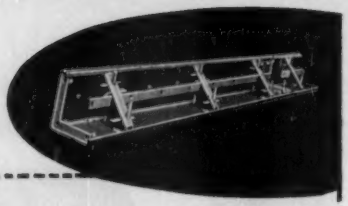
ENGINE DIVISION PLANT AND GENERAL OFFICES: SPRINGFIELD, OHIO

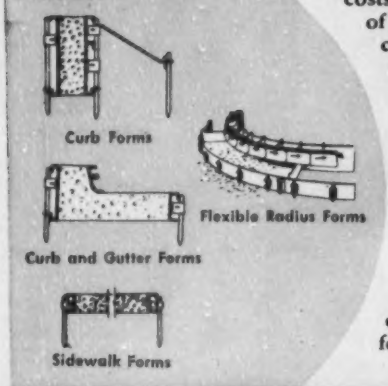
SALES AND SERVICE POINTS: Gloucester, Massachusetts • Houston, Texas • Fort Worth, Texas • San Diego, California Oakland, California • Terminal Island, California • Ketchikan, Alaska • Washington, D.C. • Chicago, Illinois • Portland, Oregon • Astoria, Oregon • Casper, Wyoming • Halifax, Nova Scotia • Vancouver, B.C. • Toronto, Ontario • Park Rapids, Minnesota • New York, New York • Seattle, Washington • New Orleans, Louisiana • Pittsburgh, Pennsylvania

Get the *"Complete Package"* of BLAW-KNOX UNIVERSAL FORMS

SAVE HALF

ON CURB, GUTTER AND SIDEWALK JOBS





HERE'S the fastest way to cut concrete forming costs you ever saw. *One "Complete Package"* of Blaw-Knox Steel Forms handles *every* concrete curb, curb and gutter or sidewalk job, from simple straight work to curved or serpentine shapes. They're standardized for complete interchangeability! You can use them over and over again in combinations to meet an almost endless variety of specifications. Expensive carpentry, especially on curves, is eliminated. You save on costly materials, too. Easy to set, strip, handle and transport. Maintenance is practically non-existent. See your Blaw-Knox distributor for additional details.

Blaw-Knox Heavy-Duty Road and Airport Forms

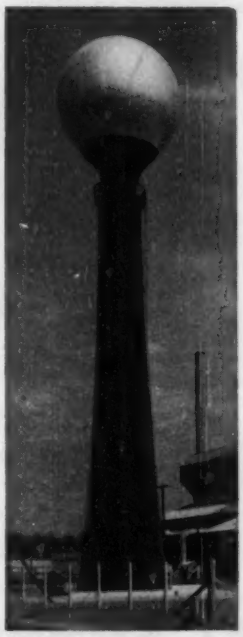
You get faster form setting, *always true to line and grade*, with Blaw-Knox Self-Aligning Steel Paving Forms. Available in heights of 8" or more, or in Dreadnaught Forms under 8" height. 12" x 12" Heavy-Duty Forms and Airport Paving Forms in sizes above 12" designed for the thicker slabs of modern airport runways.

BLAW-KNOX COMPANY
BLAW-KNOX EQUIPMENT DIVISION
Farmers Bank Building
PITTSBURGH 22, PA.
Offices in Principal Cities

Ask about the Blaw-Knox "COMPLETE PACKAGE" of CONCRETE PAVING and READY-MIX EQUIPMENT

MUNICIPAL ENGINEERS—**Cut the high cost of labor and materials with strong, versatile, easy-to-use *steel* forms. Blaw-Knox can supply you with the greatest variety of standard or special forms available. Write today for Bulletin 2259 . . . 24 pages of illustrated form set-ups and detailed instructions on how to use them for every type of work.**

Spherical Tanks on Tubular Towers



The COLE Spherical Tank on Tubular Tower is unique in its field. We design and erect special tanks of this character. It provides an attractive and serviceable unit—economical to maintain, efficient in service and pleasing in appearance.

Write for special booklet on these modern, welded Spherical Tanks which provide gravity water pressure, and for copy of latest Cole catalog, "Tank Talk."

Established 1854

R. D. COLE MFG. CO.
NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

FLORIDA VACATION
$59.50 WEEK
with COUNTRY CLUB PRIVILEGES

Unbelievable but true, many brick ground floor villas with bedroom, living room, electric kitchen, tile bath, completely furnished, $59.50 weekly. Two and three-bedroom villas slightly higher. At the ocean, playgrounds, shopping center, private country club.

Free booklet. Write today.

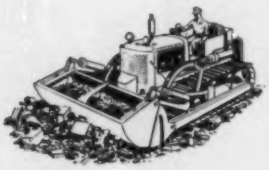
Ellinor Village
ORMOND BEACH, FLA.
DAYTONA BEACH AREA

Metcalf
UNIFORM
FABRICS
Standard fabrics for over eighty years
WHEN BUYING A UNIFORM... LOOK FOR THE TRADE-MARK ON THE BACK OF THE FABRIC
UNIFORM CLOTH
METCALF BROS. & CO., INC.
THIS SEAL IS YOUR GUARANTEE OF UNIFORMITY IN COLOR AND SERVICE.
SPECIFY
386
STANDARD SERGES FROM 12 TO 20 OZ.
STANDARD TROPICALS FOR SHIRTS
All in Premier 386 Quality
ALSO OVERCOATINGS
IN 20 AND 30 OZ. WEIGHTS
ELASTIQUES
Sample Brochure Upon Request
METCALF BROS. & CO., INC.
45 EAST 17th STREET, NEW YORK CITY
FOR UNIFORM SATISFACTION

Stadium Grows

NEARLY 850 CUBIC YARDS of refuse is dumped daily at the Gary sanitary landfill site, then spread and compacted by the city's INTERNATIONAL TD-14A and Drott Bullclam.

1. Prepares the site



2. Crushes and compacts refuse

3. Transports and spreads earth cover

4. Grades and levels finished area

From Swamp

City of Gary, Indiana, Uses Sanitary Landfill to Build New Recreational Site

Down in Gary, Indiana, the Street Department is converting worthless swamp land into the future site of a football field and stadium through the Bullclam Shovel Method of Sanitary Landfill of garbage disposal.

It works this way.

Under the direction of Superintendent of Streets, Glen Smith, garbage is dumped into the open swamp, then spread and compacted by the city's INTERNATIONAL TD-14A and Drott Bullclam. When a firm foundation has been established . . . and it doesn't take long . . . a shovel scoops up rich top soil to cover the dry, stable, refuse-built land.

The INTERNATIONAL Crawler-Drott Bullclam unit spreads the rich cover dirt over the compacted refuse. And as this operation is repeated day after day, the new land moves slowly across the swamp, constantly coming closer to the day when the landfill project will be completed and turned over to the City of Gary Athletic Department for development of the stadium and the football field.

"The INTERNATIONAL*-Drott unit working on our sanitary landfill operation is actually making money for the city,"* according to Superintendent Smith. *"Instead of paying to dump refuse, we're using it to build land. We're getting paid with new property for needed parks and playgrounds."*

Only the INTERNATIONAL Crawler with matched Drott Bullclam is specifically designed for the Bullclam Shovel Method of Sanitary Landfill . . . and it's the only "one-man sanitation squad" for all four steps of the job.

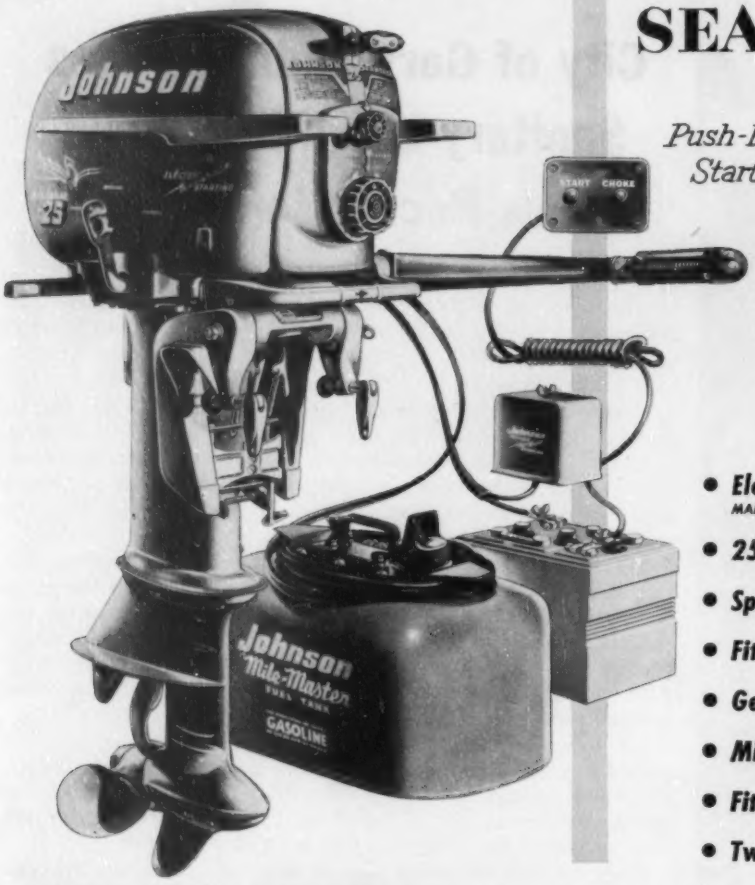
We'll help you select the site, train your operators. For details, see your INTERNATIONAL Industrial Distributor or write:

DROTT MANUFACTURING COMPANY, MILWAUKEE 8, WISCONSIN
INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

BULLCLAM BY DROTT

POWER BY INTERNATIONAL POWER THAT PAYS

New! ELECTRIC STARTING SEA-HORSE 25



Push-Button Starting

- **Electric Starting!** — ALSO EQUIPPED FOR MANUAL STARTING
- **25 Horsepower!**
- **Speeds over 30 mph!**
- **Fitted for Ship-Master Remote Control!**
- **Gear Shift!** FORWARD-NEUTRAL-REVERSE
- **Mile-Master Fuel System!** 6 GALLONS
- **Fitted for Fuel-Master Supply System!**
- **Twist-Grip Speed Control!**

Johnson
SEA-HORSE
OUTBOARD MOTORS

Talk about the "automatic outboard." This is IT! Here is everything that has made the Sea-Horse 25 sensational — PLUS JOHNSON-ENGINEERED ELECTRIC STARTING!

It spins into action at the first touch of the starter button (still equipped for manual starting, too). In fact, this great motor is engineered so that you can choke, start, shift, throttle, steer, and stop *without leaving your seat up front!* In addition to the 6-gallon Mile-Master Fuel System (standard equipment), it's fitted for Johnson's amazing new Fuel-Master Supply System, for *extra-long* cruising range — and Ship-Master Remote Control, for shift-and-throttle operation.

Nothing has ever been created to make outboard handling so simple, so convenient, so luxurious. Get the full story. See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified phone book.

5 GREAT SEA-HORSES FOR 1954

ELECTRIC STARTING SEA-HORSE 25—25 hp. The "automatic outboard"..... $498.00*
SEA-HORSE 25—25 hp. Over 30 mph! Everything Deluxe..... $410.00*
SEA-HORSE 10—10 hp. New! Improved! Now more brilliant than ever!..... $297.50*
SEA-HORSE 5½—5¼ hp. Revolutionary *Quiet!* Suspension Drive. All the "big-motor" features with "little-motor" weight..... $210.00*
SEA-HORSE 3—3 hp. "The littlest Sea-Horse." Rugged. Amazing Angle-matic Drive... $145.00*
SHIP-MASTER REMOTE CONTROL—Shift-and-throttle. Corrosion-proof. Instant hook-up on Sea-Horse 5½, 10 and both 25's. From..... $29.50*

**Prices f.o.b. factory, subject to change. OBC certified brake hp at 4000 rpm.*

FREE!

Send for colorful, fully-illustrated catalog which describes, in detail, the Electric Starting Sea-Horse 25 and the four other great Johnsons. Catalog is yours for the asking. Write to:

JOHNSON MOTORS
6000 Pershing Road, Waukegan, Illinois
In Canada: Mfd. by Johnson Motors, Peterborough

VERSATILE one-man USE EXPEDITES WORK, SAVES Manpower and Equipment!

USERS in almost every field are discovering that cost can be reduced on dozens of material handling jobs with a Holmes-Owen Truck Loader. Among those using this equipment to reduce job expense are: states, counties, municipalities, industrial and commercial firms.

The loader makes possible a substantial saving in cost by permitting the truck and driver to form an independent working unit thereby saving time, labor and equipment. The truck driver loads, hauls and dumps without additional manpower or the use of more costly equipment. Using this equipment one man can easily do the work of several. He can lift ½ yard of materials in a single bucket full and load the average truck in only 4 minutes. A Holmes-Owen Loader can be installed on most 1½-to 2½-ton dump trucks. Consult your equipment dealer or write factory today for details.

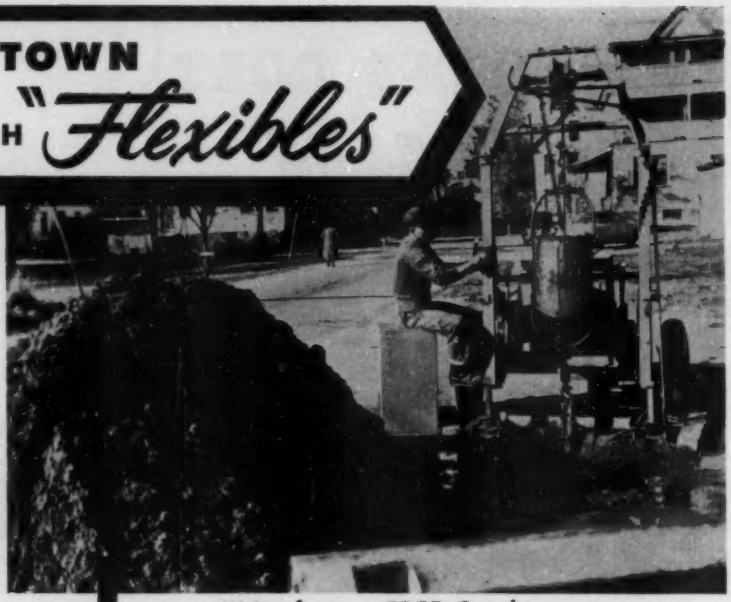
Permits DRIVER to DO:

- LOADING
- HAULING
- DUMPING
- LIGHT DIGGING
- GRADING
- CLEANING-UP

Manufactured by

ERNEST HOLMES COMPANY, Chattanooga, Tennessee

Another TYPICAL TOWN SAVING MONEY WITH "Flexibles"



Keene, New Hampshire, population 15,638, is another of many typical American towns that employ "Flexible" sewer-cleaning equipment. It originally purchased two "Flexible" Power Bucket Machines early in 1952. That the machines are put to good use and serve a real need is evidenced by this recent photograph showing a storm drain being cleaned . . . the pile of dirt representing a partial "haul" from one manhole. City officials primarily responsible for choosing "Flexibles," after careful comparison, are Fred E. Whitney, Superintendent of Public Works, and Earl Davis, Chairman, Public Works Committee. They recommend "Flexibles" highly.

Write for our **FREE** *Catalog*

Flexible SALES CORPORATION

3786 Durango Ave., Los Angeles 34, Calif.

(DISTRIBUTORS IN PRINCIPAL CITIES)

AMERICA'S LARGEST LINE OF PIPE CLEANING TOOLS AND EQUIPMENT

MORE MATERIAL...
MORE PRECISION...
MORE EXPERIENCE...

. . . are the *important differences* that make Murdock the Leader in its field today . . . as during the past 100 years!

Write for FREE Catalog

The Murdock Mfg. & Sup. Co.
Cincinnati 2, Ohio

OUTDOOR DRINKING FOUNTAINS

MURDOCK

HYDRANTS

STREET WASHERS

Holiday Inn

THE SOUTH'S FINEST

HOTEL COURTS

NORTH
(U.S. 51 North)
4040 Hiway 51 North
120 Rooms

EAST
(U.S. 7-64-79)
4941 Summer Ave.
120 Rooms

The South's Finest

SOUTH
(U.S. 51 South)
2300 S. Bellevue
76 Rooms

WEST
(U.S. 61 South)
980 S. Third St.
132 Rooms

MEMPHIS, Tennessee

HOW'S THIS FOR RUGGEDNESS?

Photo courtesy of The Bridgeport Sunday Post.

It takes more than a flood or snow and ice to knock out a MI-CO Parking Meter.

In Chardon, Ohio, a blizzard accompanied by sub-zero temperature, completely snowed under 110 MI-COs but failed to put a single meter out of commission. When the snow was cleared away the meters were back in business immediately, and working perfectly. "No difficulty was experienced, not even in opening the coin collection door," says John R. Bohl, Chardon's Chief of Police.

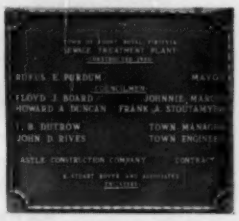
Last fall, in Bridgeport, Connecticut, the flood completely inundated many MI-COs, but failed to put any of them out of order. When the waters receded the meters were cleaned and ready to do business.

MI-COs are well known for dependable operation under the most adverse conditions. Their ability to "take it" and keep operating makes it possible to pile up enviable records for low maintenance, and consistently high earnings—not for just a year or two, but up to ten years and more.

MI-CO offers two types of meters, the highly regarded Manual, and the original, time-tested Twin Automatic. Both are built to give dependable, low-cost service. You may be sure one of these meters will meet all your requirements. Write for complete information.

MICHAELS PRODUCTS:

Store Fronts
Lettering
Check Desks
Lamp Standards
Marquees
Tablets and Signs
Name Plates
Astragals
Railings
Grilles and Wickets
Kick and Push Plates
Push Bars
Thresholds
MI-CO Parking Meters
Museum Trophy Cases
Bronze and Aluminum Doors
Bank Screens and Partitions



Bronze and Aluminum Plaques

MI-CO METERS, 231 Court St., Covington, Kentucky

Division of The Michaels Art Bronze Co., Inc.

FOR 100 YEARS

Photo: Ewing Galloway

This is Chicago, second largest city in the U. S. A.—population over 3½ million.

Print: Battmann Archive

A view of Lake Street, Chicago, as it looked 100 years ago.

MODERNIZED cast iron

they've been coming back for more...

CHICAGO installed cast iron water mains 100 years ago... and installs them today!

Chicago's skyline has changed magically in a century but the underground lines that transport water are still cast iron. Nearly 100% of her water distribution system consists of cast iron pipe. This city of "magnificent distances" has over 4,000 miles (21 million feet) of cast iron mains, supplying more than one billion gallons of water per day to a population approaching four million.

Section of a century-old cast iron main still serving in Chicago's vast water distribution system.

A famous jurist defined *good will* as the "probability of the customer's returning to the old stand." Chicago's Water Department has been coming back for more cast iron pipe for 100 years. That's good will—yes—built on proved performance. Chicago has century-old cast iron pipe in its water distribution system.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher, and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

Cast Iron Pipe Research Association,
Thos. F. Wolfe, Managing Director,
122 So. Michigan Ave., Chicago 3.

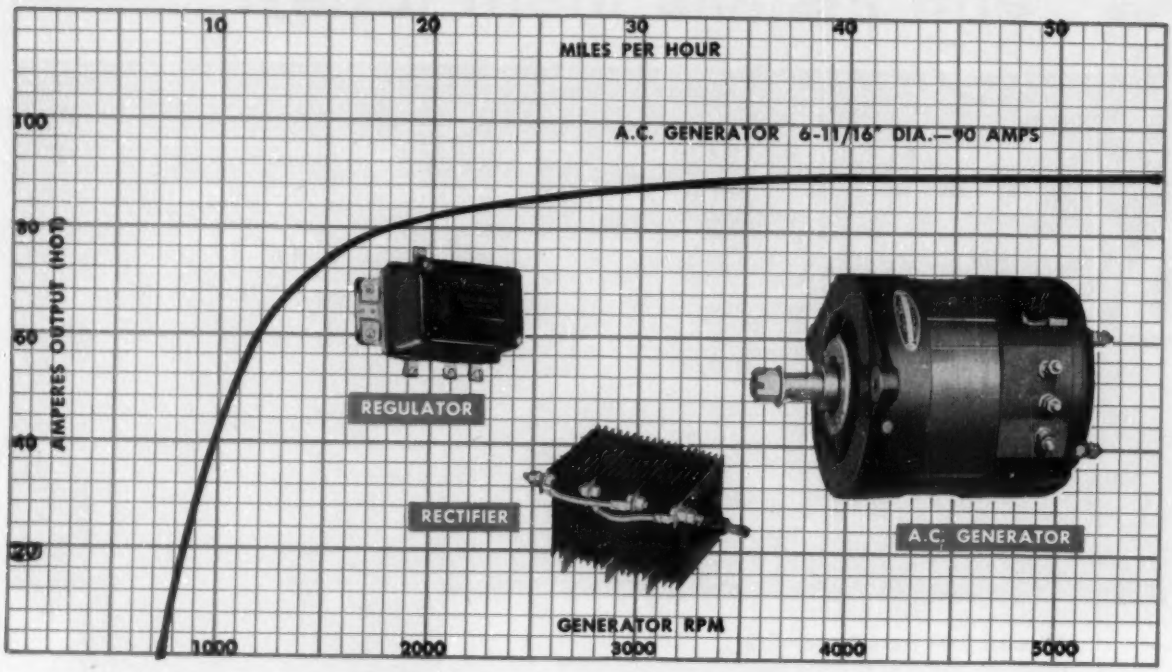
CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

pipe FOR MODERN WATER WORKS OPERATION

Power Packed and

HERE'S THE A.C. ANSWER TO EXTRA-HEAVY ELECTRICAL DEMANDS



DELCO-REMY

A. C. Generator, Regulator and Rectifier

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of public utility trucks and other vehicles equipped with two-way radio, floodlights or any extra electrical units . . . ample current reserve picks up discharged battery quickly in operation. Delco-Remy A.C. generators are suitable for use at all engine speeds.

With output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator, a matching regulator, and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages complete with installation instruction sheets for popular makes of cars and trucks are now available. The conversion job is simple. For further details and application data, see your nearest United Motors distributor.

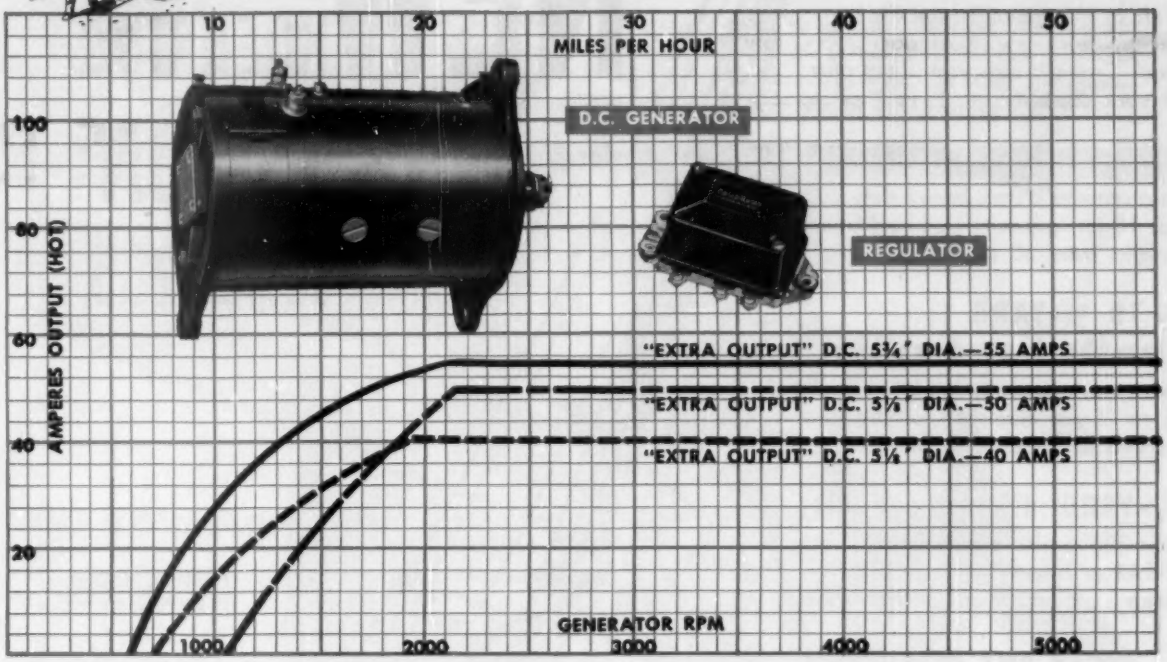
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Right for the Job

HERE'S THE D.C. ANSWER TO HEAVY ELECTRICAL DEMANDS



DELCO-REMY

Extra-Output D. C. Generators and Matching Regulators

Delco-Remy extra-output D.C. generators are an economical answer to the electrical needs of public utility pickup or panel trucks as well as other vehicles with additional lights, two-way radios, or other special electrical equipment in medium to heavy-duty service. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain.

DELCO-REMY 40-AMP GENERATOR has low cut-in, about 7 mph, charges from 11 to 17 amperes at curb idle . . . full output about 18 mph —for vehicles customarily used in heavy traffic.

DELCO-REMY 50-AMP GENERATOR has slightly higher cut-in, about 11 mph . . . full output about 21 mph—for vehicles customarily operated at higher speeds, with minimum slow driving.

DELCO-REMY 55-AMP GENERATOR has very low cut-in, about 6 mph; charges at curb idle from 20 to 30 amperes . . . attains full output at 20 to 25 mph—for vehicles customarily operated at low speeds with added electrical loads, such as city taxicabs and police cars.

For further details and application data, see your nearest United Motors distributor.

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION, ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Another machine has been added to the "KOEHRING Work Capacity" team

NEW KOEHRING 15-TON ½-yd. 205

LIFTS 15 TONS on rubber

With its maximum 15-ton lift capacity, this new Koehring 205 Truck Crane brings you a big *plus* in work capacity at "½-yd." price.

LIFTS 10 TONS on crawlers

As a crawler crane, heavy-duty 205 has 10-ton capacity . . . and boom lengths from 30 to 50 feet.

½ TO ¾-YARD clamshell or dragline

Extra work capacity lets you handle ½ to ¾-yd. clamshell or dragline buckets on wide work range.

½-YARD dipper capacity

This 205 is also available as ½-yd. shovel or hoe. Hoe digs 17¾ feet deep . . . up to 32 inches wide.

WITH ANY ATTACHMENT HERE'S WHAT YOU GET:

- On rubber-tired mounting, 32½ m.p.h. travel speeds.
- On standard or extra-long crawlers, 16, 20 or 24" shoes.
- Automatic traction brakes on crawlers.
- Only 2 major shafts in upper machinery.
- Antifriction power flow for dig, lift, swing, and travel.
- 4 separate adjustable hook-rollers.
- Big 20" clutches, self-adjusting.

Before you invest in any excavator or crane, see your Koehring distributor about this new 205, or write us.

K182-AC

Send us bulletin on the new ½-yard, 15-ton 205.

NAME _____ TITLE _____

DIVISION _____

STREET _____

CITY _____ ZONE _____

KOEHRING COMPANY • Milwaukee 16, Wis.

Subsidiaries: PARSONS • KWIK-MIX • JOHNSON

Only 22 Pounds Complete

THE NEW HOMELITE

MODEL 17

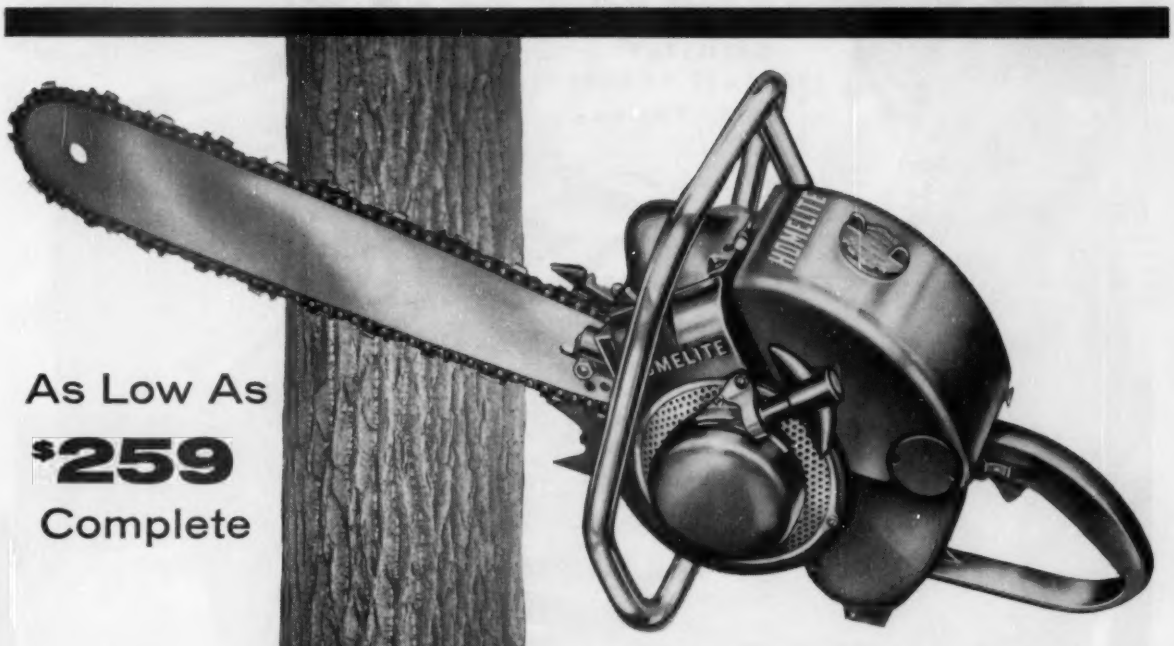
One Man Chain Saw

3.5 BRAKE* hp

*Actual Dynamometer Rated Horsepower

Cuts 18 inch trees in 18 seconds — Cuts trees 4 feet or more in diameter

Here is the highest quality, lightweight chain saw at the lowest possible cost. It's the *new* Homelite Model 17 . . . the mighty mite of chain saws . . . the only saw its size with 3.5 actual dynamometer rated horsepower. Powerful enough to do the job *faster* . . . light enough to make the job *easier*. . . this new Homelite will save time, save money and cut labor and operating cost on every type of woodcutting job.



As Low As

$259

Complete

Built and backed by Homelite, manufacturers of high powered lightweight gasoline engine driven units for more than thirty years, this sturdy, dependable saw will *out-perform* and *out-last* any other saw its size or price. Makes every type of cut . . . notching, felling, limbing, bucking, boring and undercutting. Operates in any position . . . cuts right, left, up, down, or upside down . . . without carburetor adjustment or loss of power. Available with 14″ to 38″ straight blades or 14″ and 18″ plunge cut bows.

Send coupon today for more information or free demonstration

HOMELITE CORPORATION, 103 Riverdale Ave., Port Chester, N. Y.
Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Ottawa.

☐ Please call me about a free demonstration

☐ Please send me illustrated bulletin L-920

☐ Please send me name of nearest Homelite dealer

Name.....

Address.....

Town.....*County*.....*State*.....

One BURROUGHS ACCOUNTING MACHINE will do both BUDGETARY AND PAYROLL ACCOUNTING

This useful and versatile Burroughs accounting machine can be kept busy every day, doing the work of two, even three, separate machines.

This Burroughs by-passes old-fashioned accounting methods to furnish all administrators with accurate *current* reports of activities under their control.

Payroll accounting is reduced to two operations: 1) time and earnings are computed; 2) complete checks and *all* payroll records are prepared together . . . four records at one writing!

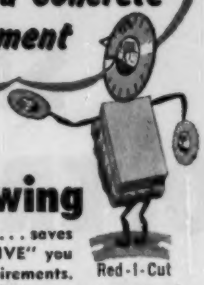
This Burroughs is a complete accounting machine . . . it can do almost any job in your office. And it is a machine on which any operator—even an inexperienced one—can keep books faster, more simply, more economically.

Let your Burroughs man show you the new portfolio, *Streamlined Governmental Accounting and Management Reports*, which gives the full story of the Burroughs governmental accounting machines' versatility and usefulness to you. Call your local Burroughs Branch office or write Burroughs Corporation, Detroit 32, Michigan.

WHEREVER THERE'S BUSINESS THERE'S **Burroughs**

EVEREADY POWR-DRIVE CONCRETE SAW

Ask Your EVEREADY Dealer for the Most Complete Line of Masonry and Concrete Cutting Equipment

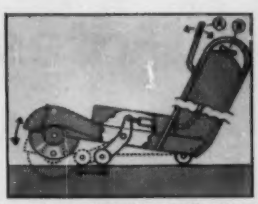


We've taken the— PUSH-PULL Out of Concrete Sawing

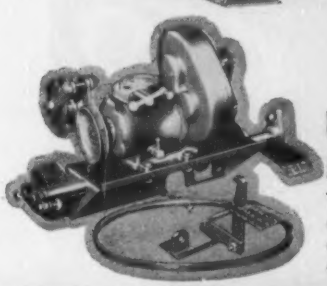
"POWR-DRIVE" smoothly drives saw forward at your controlled speed . . . saves operator effort and increases cutting footage per day. With "POWR-DRIVE" you can instantly regulate the cutting speed to your various cutting requirements. Two abrasive-coated wheels act as a friction drive in contact with both rear saw wheels. "POWR-DRIVE" is engaged or disengaged by a convenient foot lever control. See the amazing Eveready "POWR-DRIVE" Concrete Saw at your local Eveready Dealer.

PATENTED *EVEREADY* FEATURES

Shown at the right are three exclusive features that make EVEREADY the fastest, most efficient concerte and asphalt cutting saw. Other features are: Dashboard controls for greater ease in operation and maneuvering; blade depth control that permits sawing to a specified depth.

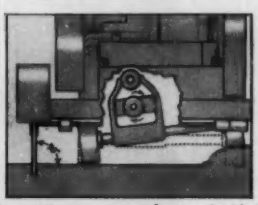


Two easy strokes of Hydra-Eze Handle (A) and hydraulic power lifts blade fast —straight out of cut. Quarter turn of Hydra-Eze Blade Release Lever (B) and hydraulic power feeds blade gently, smoothly into material.



BUY COMPLETE OR ADD THE *NEW* *EVEREADY* POWR-DRIVE KIT LATER

The "POWR-DRIVE" Kit comes completely assembled . . . only four holes—four bolts are needed to install the kit on any Eveready Concrete Saw. "POWR-DRIVE" Kits are sold only by authorized Eveready Dealers.



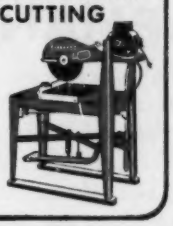
On rough or uneven surfaces—the blade on an EVEREADY Concrete Saw always cuts in a perfect, true, vertical plane. TRI-MATIC BLADE ALIGNMENT prevents binding, twisting, or tilting of the blade as the saw moves over uneven or broken surfaces.

"POWR-DRIVE" cuts MORE Concrete Every Hour . . . Cuts Costs on Every Job! and EVEREADY'S "PROVEN QUALITY" is Your Guarantee for "PROVEN RESULTS"!

EVEREADY RED-I-CUT DIAMOND BLADES

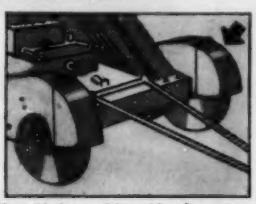
FOR ALL CONCRETE SAWS — Everyeady "RED-I-CUT" Diamond Blades are designed for FASTER CUTTING plus MAXIMUM BLADE LIFE —regardless of the type of concrete or asphalt. "RED-I-CUT" Blades fit EVERY make and model concrete saw . . . . BUT for the BEST cutting job— go EVEREADY all the way! EVEREADY "Powr-Drive" and "Red-I-Cut" Diamond Blades make your perfect combination for "Proven Results."

EVEREADY BRIKSAW FOR MASONRY CUTTING



FREE BOOK

FREE BOOK on Masonry cutting . . . requested by more than 18,000 . . . will be sent without obligation . . . or ask your dealer.



Place blade on either side of saw to cut in corners and confined areas. Blade guard, water hose, and front guide wheel marker assembly are all interchangeable.

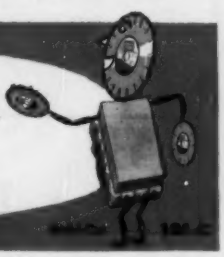
EVEREADY DEALERS . . .

in Most Principal Cities in the United States and Canada

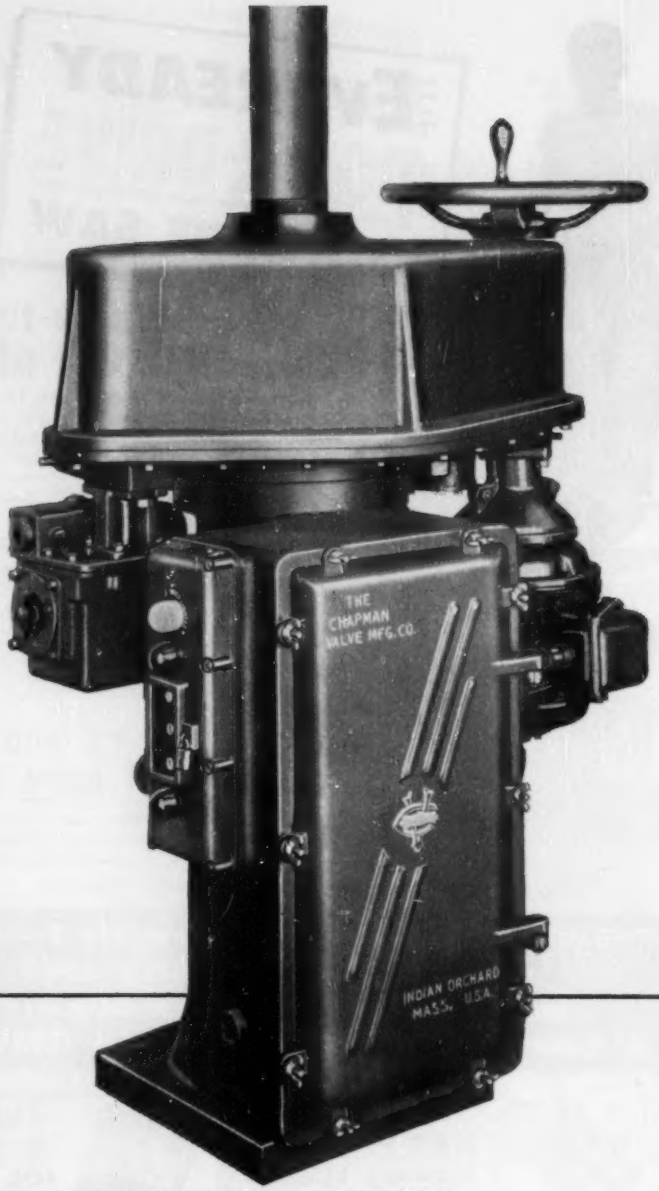
Write for the Name of Your Nearest Dealer.

EVEREADY BRIKSAW CO. ● 1509 S. MICHIGAN BLVD.

CHICAGO 5Y. ILL.



SMART OPERATOR for Valves, Gates and Floorstands



CHAPMAN'S MOTOR UNIT

Instant control of valves and large sluice gates at the touch of a butto.1 . . . that's what you get with Chapman Motor Units on the job. Completely housed and thoroughly dust and weather proof, these units are built "to take it" for years, on the roughest service. They're designed for simplicity and extreme ruggedness, as shown by internal view above.

Chapman Motor Operated Floorstands are delivered to the job with all internal wiring complete, so all the wiring to be done is to bring the power leads into the connection box... saving time and money in installation and assuring proper operation. Write for Catalog No. 50.

The Chapman Valve Manufacturing Co.
INDIAN ORCHARD, MASSACHUSETTS

When they say,
"it's the

PIECE OF EQUIPMENT WE HAVE"

Central Construction Co., Indianola, Iowa is talking about its 4-wheel-drive "PAYLOADER" tractor-shovel.

Thousands of others like them too — and so will you. See your nearby "PAYLOADER" Distributor, or write The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill.

YOU CAN'T COMPETE IF YOUR EQUIPMENT IS OBSOLETE

PAYLOADER®

THE FRANK G. HOUGH CO. • Since 1920

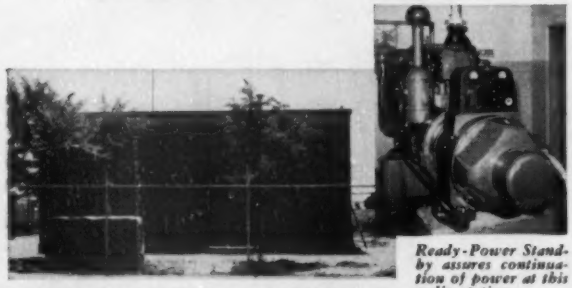
ERASE

THE HAZARDS OF POWER FAILURE

Nobody can predict when sudden power failure will occur. Yet it seriously concerns everybody because of its effect on vital services . . . lighting, water supply, refrigeration, heating, plant operation, telephone service, elevator service.

In thousands of applications throughout the world, Ready-Power Standby engine generators safely and dependably maintain vital services when normal power supply is interrupted. They are used in commercial, governmental, civil defense, and military installations, because they are built to meet practically any standby requirement.

You, too, can avoid the hazards of unexpected commercial power failure by installing Ready-Power Standby equipment. Ready-Power engine generators are available in gasoline, natural gas, butane, propane, or Diesel models. Write today for complete information.



Ready-Power Standby assures continuation of power at this radio station.

Municipal plant has Ready-Power to guard against water famine.

READY-POWER
ENGINE GENERATORS

THE READY-POWER CO. • 11231 Freud Ave., Detroit 14, Mich.

Manufacturers of Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel Electric Power Units for Industrial Trucks.

For incinerator service

Here is a HAYWARD E-14 yard clam shell picking up refuse and carrying it to the incinerator hopper.

WE make them all—clam shell, orange peel, electric motor—in many capacities to suit your city's digging, loading, handling and cleaning.

Write for Bulletin

THE HAYWARD COMPANY

50 Church Street — New York 7, N. Y.

NO STOOP, NO SQUAT, NO SWEAT WHEN YOU USE THE

Hoffco PAT PEND.

CLEARING QUARTETTE

2 H.P. POWER UNIT AND FOUR SPECIALIZED CUTTING HEADS!

Most efficient team sold, HOFFCO's 2 HP Power Unit—4 worksaving attachments. Size up the job, attach the right cutting head, move 6 times faster, stand upright every second. 1000's now in use. See it demonstrated today!

WRITE FOR COMPLETE INFORMATION

SAWETTE HEAD $64.50 Chain saw fells growth up to 8" in diameter. You stand upright!

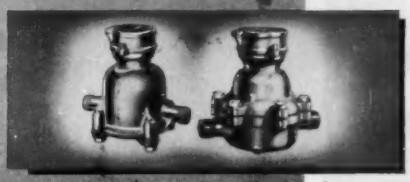
TRIMETTE HEAD $59.75 Circular blade trims close—spreads mulch evenly—no raking!

SCYTHETTE HEAD . . . . $39.75 Clears weeds, brush, any tangle—even works under water!

BRUSHETTE HEAD . . $59.75 Guarded 10" blade clears stubble, brambles—rips 3" dia. trees; protects operator!

HOFFCO, inc. ALL PRICES F.O.B. FACTORY RICHMOND, INDIANA

WATER is vital...



BADGER meters conserve it!

More than 25 million acres of crops must be irrigated to provide America's food supply. The Badger water meters used in thousands of communities throughout the nation help save water for this vital need . . . measure water accurately for homes and industry . . . provide a precise check on water usage and waste. With their outstanding record of performance, Badger meters have won the praise of water works men everywhere . . . are known as the meters that save water, work, money!

BADGER WATER METERS

BADGER METER MFG. CO., Milwaukee 45, Wisconsin

"Measuring the water of the world"

B-4PB Four-Way Bracket Pedestal Assembly for Whiteway or Utility Poles

"EYE-CATCHING" . . .
STREET NAME ASSEMBLIES

BY

MIRO-FLEX

B-4P Four-Way Pedestal Assembly
Also available as
B-2P Two-Way Pedestal Assembly

Sure they are America's most readable street name assemblies . . . and what's more they are a sign of efficiency and city pride. Miro-Flex two- and four-way street name assemblies are used by the nation's most progressive towns and cities. Uniformity and quality workmanship assure you of a good investment. Four-inch letters embossed on six-inch, 18-gauge, zinc-coated, Bonderized steel plates give you maximum legibility. Yes, you and the citizens will be glad you chose Miro-Flex.

The assemblies shown are merely indicative of the Miro-Flex line. Be sure to investigate the entire line before you buy.

B-2RB Two-Way Ring Bracket Assembly, and
B-4RB Four-Way Ring Bracket Assembly

Write for your free copy of "SIGNS BY MIRO-FLEX," which describes all Miro-Flex Traffic Control Signs.

THE MIRO-FLEX CO., INC.
1824 EAST SECOND ST. WICHITA, KANSAS

- GREATER ECONOMY
- DURABILITY
- SIMPLE APPLICATION
- BRILLIANCE OF COLORS
- NO TYING UP OF EQUIPMENT
- EXTRA LONG STORAGE

SEND US YOUR PROBLEM – OUR TECHNICAL ADVICE IS *FREE*

Ward's TRUCKSIGN TRANSFERS
8504 LYNDON AVE.
DETROIT 38, MICHIGAN
A DIVISION OF WARD'S NAME PLATES

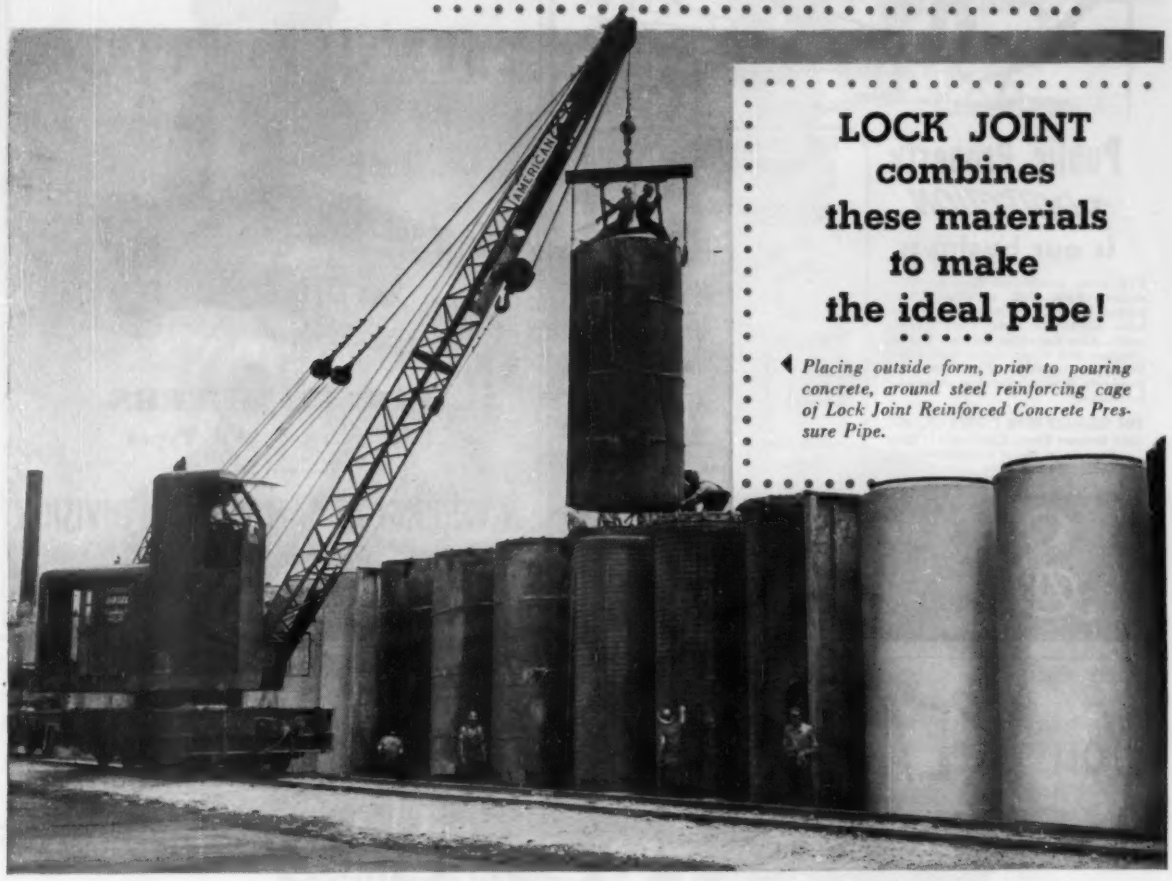
The *NEW IMPROVED* NETCO CATCH BASIN CLEANER
WITH PNEUMATIC CONTROLS

A Necessity For Every Municipality

Easily mounted on any short wheel base truck with 8 ft. in back of the cab, the Netco can be operated continuously, averaging 20 to 30 catch basins a day. The Netco with its two powerful pneumatic buckets (orange peel or clamshell) is simple to operate, has a hoisting capacity up to 1500 lbs., and easily removes all debris through openings as small as 16 inches. *Send for our six-page descriptive folder.*

NETCO DIVISION
CLARK-WILCOX COMPANY
118 Western Avenue
Boston 34, Massachusetts

There's no substitute for CONCRETE and STEEL!



LOCK JOINT combines these materials to make the ideal pipe!

Placing outside form, prior to pouring concrete, around steel reinforcing cage of Lock Joint Reinforced Concrete Pressure Pipe.

CONCRETE, with its proven qualities of durability, non-corrosion, resistance to electrolytic action, and high compressive strength is combined, by Lock Joint, with steel's toughness, resilience and high tensile strength to make a pipe that retains the best qualities of both—non tuberculance, high structural strength and long life with little or no maintenance. Dense concrete affords complete protection for the quality reinforcing steel. Both materials are carefully calculated to meet your pressure needs with a wide factor of safety. The Lock Joint Pipe Company's Rubber and Steel Joint is extremely watertight and, at the same time, flexible.

For superior strength, carrying characteristics and trouble-free operation, let Lock Joint supply your pipe needs in sizes 16″ and larger.

SCOPE OF SERVICES—*Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16″ in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

LOCK JOINT PIPE COMPANY

Established 1905

P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

SEWER & CULVERT PIPE PLANTS:

Casper, Wyo. • Cheyenne, Wyo. • Denver, Col. • Kansas City, Mo. • Kennett Square, Pa. • Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. • Wichita, Kan. Kenilworth, N. J. • Hartford, Conn. • Tucumcari, N. Mex. • Oklahoma City, Okla. Tulsa, Okla. • Beloit, Wis. • Hato Rey, P. R. • Ponce, P. R. • Caracas, Venezuela

LOCK JOINT *Reinforced Concrete* PRESSURE PIPE

Public Property PROTECTION is our business

For your protection Stewart produces chain link wire and iron picket fence; wire mesh partitions; wire window guards; steel folding gates. Also flagpoles; settees; bronze plaques and other metal specialties. Write for catalogs. Please mention products in which you are especially interested.

THE STEWART IRON WORKS CO., INC.
2021 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

WORTHINGTON-GAMON

LIQUID METERS
All Sizes All Types

WORTHINGTON-GAMON METER DIVISION
Worthington Corp.
296 South Street Newark 5, New Jersey

You REALLY LIVE at an Affiliated National Hotel

Comfortable Rooms

Delicious Meals

Conveniently Located in 21 Prominent Cities

AFFILIATED NATIONAL HOTELS

ALABAMA
HOTEL ADMIRAL SEMMES.....Mobile
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DISTRICT OF COLUMBIA
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INDIANA
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LOUISIANA
JUNG HOTEL.....New Orleans
HOTEL DESOTO.....New Orleans

NEBRASKA
HOTEL PAXTON.....Omaha

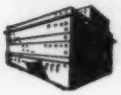
NEW MEXICO
HOTEL CLOVIS.....Clovis

SOUTH CAROLINA
HOTEL WADE HAMPTON.....Columbia

TEXAS
HOTEL STEPHEN F. AUSTIN.....Austin
HOTEL EDSON.....Beaumont
HOTEL BROWNWOOD.....Brownwood
HOTEL BAKER.....Dallas
HOTEL TRAVIS.....Dallas
HOTEL CORTEZ.....El Paso
HOTEL BUCCANEER.....Galveston
HOTEL GALVEZ.....Galveston
HOTEL JEAN LAFITTE.....Galveston
CORONADO COURTS.....Galveston
MIRAMAR COURT.....Galveston
HOTEL PLAZA.....Laredo
HOTEL LUBBOCK.....Lubbock
HOTEL FALLS.....Marlin
HOTEL CACTUS.....San Angelo
HOTEL MENGER.....San Antonio
ANGELES COURTS.....San Antonio

VIRGINIA
HOTEL MOUNTAIN LAKE..Mountain Lake
HOTEL MONTICELLO.....Norfolk

Superb Service



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MARCH 1954 The American City

45 Is Too Old for a Filter

Escanaba, Mich., builds a new plant to solve its water-supply problems, and benefits by a lake-front park on the old site

By WILLIAM J. CADIGAN, *Resident Engineer, Consoer, Townsend and Associates, Chicago, Ill.*

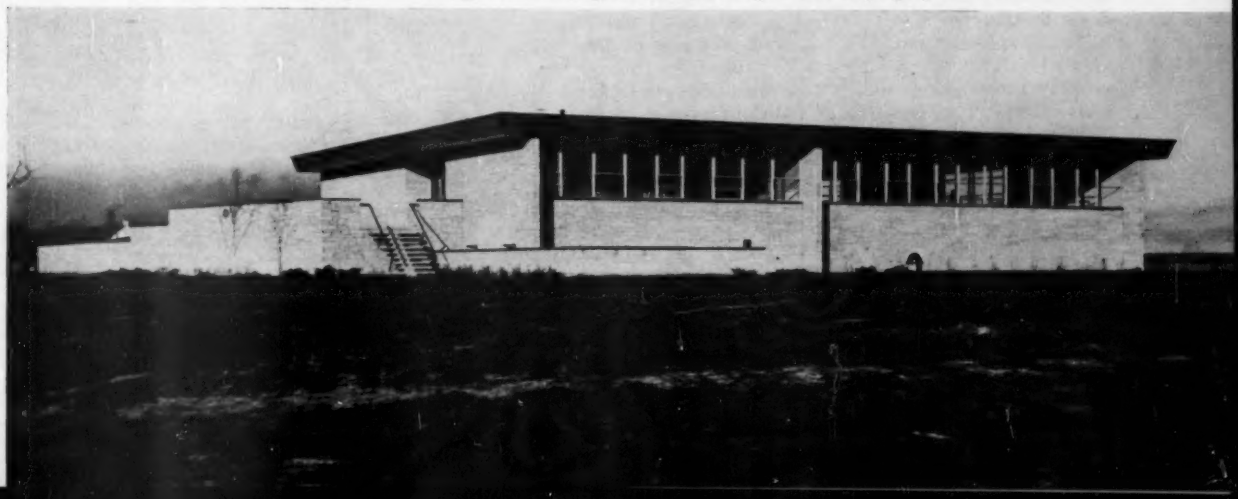
A 45-YEAR-OLD water filter plant, most will agree, is pretty old. When Escanaba appraised its veteran plant and the limited amount of water that it could deliver, the city had sufficient reason to build a new plant and solve its water problems for years to come.

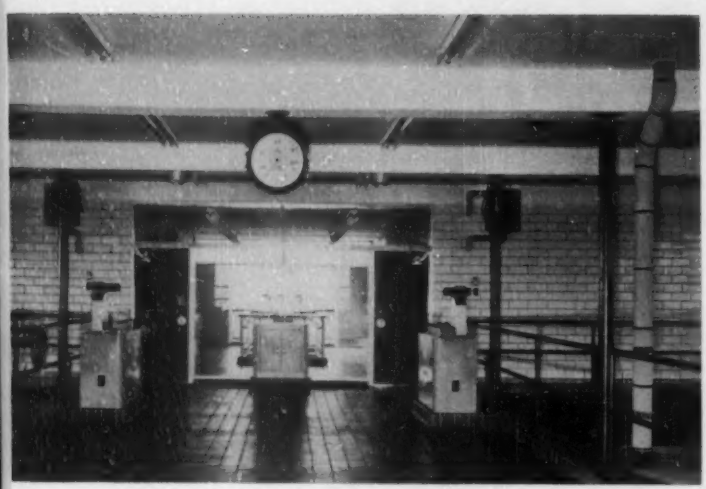
Escanaba, an "upper peninsula" city in Michigan, draws water from Lake Michigan. As indicated, its 15,000 people, until 1942, received water from a filtration plant built in 1908. In 1942, the city built four deep wells, and the filtration plant was placed in retirement as befitted its advanced age. However, the well supply eventually proved inadequate and the plant had to go back to active service to meet the emergency, despite the fact that it was on the verge of collapse.

This situation obviously had to be considered as a stopgap until the city could investigate several other methods of obtaining water. However, none of the less costly alternatives seemed practical, so our firm received the assignment to design and supervise the construction of a new filtration plant.

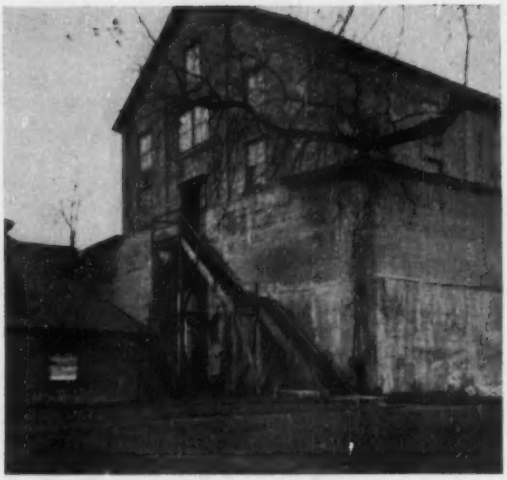
The new plant is located on a peninsula-shaped plot of land which juts out into the lake at the eastern part of town. This land was filled by dredging from lake bottom by the city some years ago in its program to

Escanaba's new water-plant building, with its long, low lines, is as up to date as jet propulsion.





The engineering features of the plant are conventional and show evidence of time-tested operating reliability and convenience.



The half-century-old, abandoned plant gave ample evidence to Escanaba's residents that it was ready to retire.

develop a lake-front park. The city demolished the unsightly old plant and is presently extending its park system to embrace the abandoned water-plant site.

The building, centrally located in the new park area, is a low, broad, angular structure with a broad tile-red fascia that extends completely around the building at roof level. The entire bulding and exposed tank areas are faced with Wisconsin Lannon stone which points up the low lines and gives the building a "country club" appearance.

Plant Design

The plant, as engineered, is of the conventional, downflow type. Water is treated with a coagulant and allowed to precipitate heavier impurities in settling basins before being filtered.

The water enters the plant through a 20-inch intake line which formerly served the old plant. Three Fairbanks-Morse (F-M) vertical turbine-type pumps of a combined capacity of 6 mgd (million gallons daily) deliver it to the mixing chambers.

At the plant operating level, the water is dosed with alum, lime, and activated carbon, and passed into Infilco mixing, flocculating, and settling basins where the heavier impurities are precipitated out by the alum floc. The plant uses five Infilco EE4 feeders. Two machines feed alum, two feed lime, and one, carbon.

From the settling basins, the water passes into the rapid sand filters. The filter unit uses a Wagner underdrain that supports 14 inches of graded gravel and 27 inches of specially graded silica sand. The rate of flow of water through the filters is controlled by Infilco's new type of pneumatically operated rate-controller mechanism. The loss-of-head indicator is also pneumatically operated. The filters are cleaned by the use of two Fairbanks-Morse 3,900-gpm horizontal centrifugal backwash pumps.

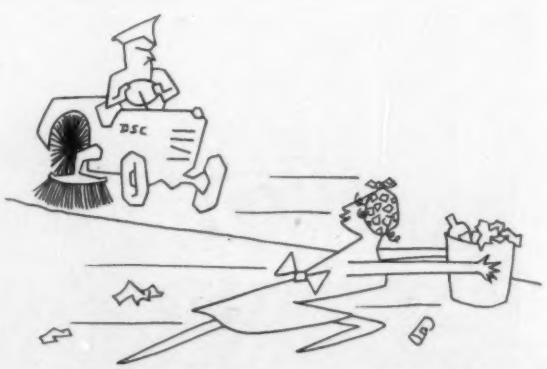
After filtering, the water is stored in a 1,000,000-gallon, concrete, underground reservoir. Three F-M horizontal, centrifugal, high-service pumps deliver the water directly to the distribution system. The high-service pumps are electrically powered and have a total capacity of 5.5 mgd. In addition, the city has an independent standby pump, whose capacity is 2 mgd, driven by a Climax gasoline engine for use in case of electric power failure.

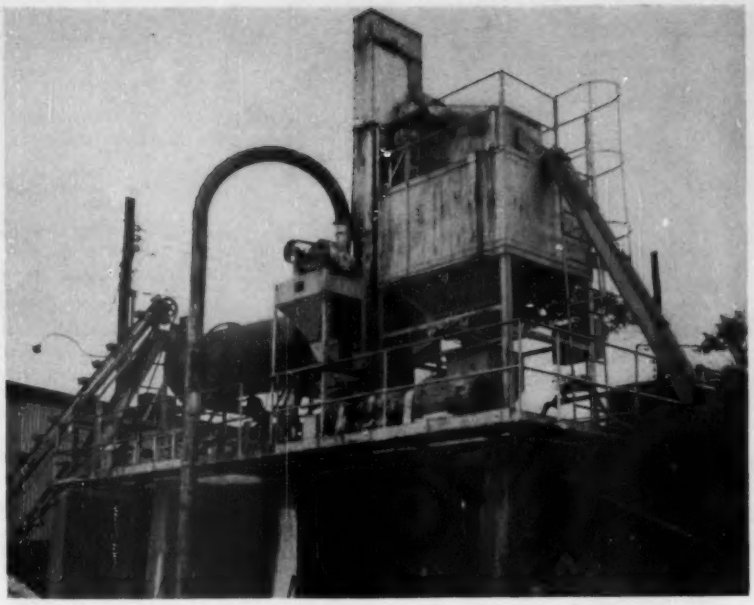
For positive sterilization, the plant has available three Wallace & Tiernan MSVM chlorinators. These have been designed so that the water can be prechlorinated as it enters the plant and again as it leaves to assure the proper chlorine residual at this point.

The plant facilities include a modern, up-to-date laboratory for the performance of water analysis. The interior of most of the building is of glazed tile, making cleaning easy and adding to the attractiveness of the structure.

The plant went into operation in January 1953. It is supplying about 1.3 mgd during the winter months, and 2.5 mgd during the summer. The top capacity of 4.5 mgd can be boosted to 6.0 mgd by equipping one partially constructed filter. The design anticipates its eventual enlargement to 9.0 mgd capacity.

The water department is managed by A. C. Christensen, superintendent of water and sewers, under the general direction of A. V. Aronson, city manager. The plant was designed by Consoer, Townsend and Associates of Chicago, under the direction of Paul Johnson. The architecture was designed by Perkins and Will of Chicago. The Pearson Construction Company of Benton Harbor, Mich., was the general contractor.





Jacksonville's asphalt plant brings street maintenance to a high standard.

Street Repairs Are Better With Plant-Mixed Asphalt

By WALTER G. DANIEL
City Engineer
Jacksonville, Fla.

Jacksonville, Fla., gets a wider variety of asphalt mixes that are more thoroughly processed for street repair and maintenance work

MONEY SPENT maintaining asphalt streets with an inferior mix is money wasted. Most city engineers and street officials are fully aware of this, and so Jacksonville can easily justify its investment in a 10-ton White hot-mix asphalt plant. With this equipment, the city can be sure of getting the best asphalt mix that money can buy.

Street maintenance in Jacksonville, as in other cities, is serious business. The city has experienced great growth over the past few years, and many of the new streets have been built by developers who have used rather low standards. Maintaining these streets is a job that was beginning to get away from us until we purchased the hot-mix plant a few years ago.

Poor Results with Cold Mix

We had been using an old concrete mixer that we had remodeled to produce a cold mix. We never had proper facilities for drying the aggregate, for controlling the quantities going into the mix, or for preparing a mix that would really give us good service.

Even under the best conditions, a cold mix is hardly efficient enough to give good service. However, with our new plant, we can turn out any type of asphalt mix from the highest type of sheet asphalt to a temporary cold patching material and be confident that the results will be as good as present engineering skill and knowledge can provide.

Most of the material produced in the plant is sheet asphalt. We try to repair and maintain streets with the same type of material that was used when the street was originally built. Our sheet asphalt mix contains 9% bitumen. A typical sieve analysis of the aggregate, selected from our test records, shows the following results:

Screen Size	*Percentage Passed*
4	none
10	28
40	22½
80	30
200	11

We also make cold-mix patching for emergency work, but prefer not to use it unless it is absolutely necessary. Our cold mix is composed of aggregate in these proportions:

One part limestone — ⅜ inch maximum.
Two parts limestone — ½ inch maximum.
Two parts limestone — Passing No. 6 screen.

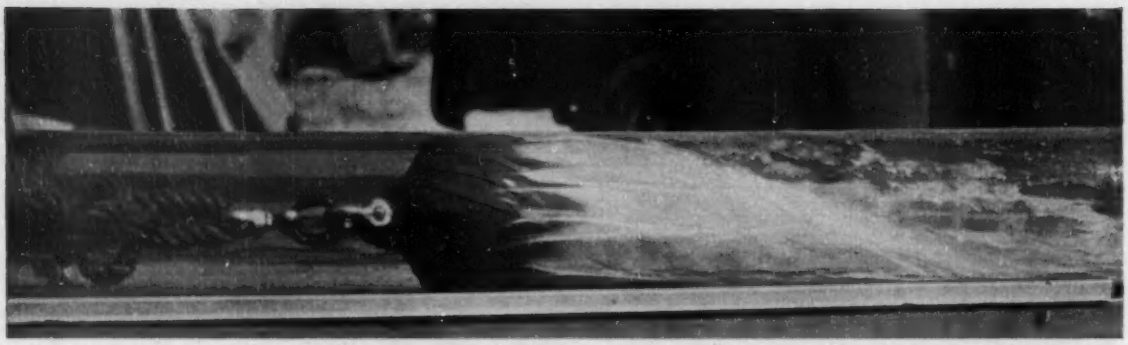
When this mix is produced in a 1,000-pound batch, we will add 55 gallons of RC-1 cutback asphalt for the bitumen content.

Major Work by Contract

We use this plant for maintenance work only. We do not attempt to supply material for any major construction job. Two asphalt plants exist in the city that are operated by private companies. Both firms can supply the larger quantities of mix more efficiently than can our plant. In our biggest operation, we have produced 55 tons of asphalt mix which was about all our crews were able to handle.

Most of our maintenance work involves resurfacing odd-shaped areas. Utility cuts require a substantial portion of our output. For such an operation, we use hand rakers who spread the asphalt and a 5-ton Buffalo-Springfield roller that compacts it.

The operation of the asphalt plant is directed by William Sessions, plant foreman. William B. Forrestor is the assistant engineer in charge of asphalt maintenance work in the City of Jacksonville.



The scouring action of the ball is illustrated. When it is inserted into the line, water flow is reduced, creating a high-pressure jet of water that moves the sediment hydraulically ahead of it. Here a 2-foot head of water is developed (left).

When Is a Cleaned Sewer Clean?

By SIDNEY PREEN
Superintendent of Sewer Maintenance
Long Beach, Calif.

In Long Beach, Calif., a manhole and sewer have been set up above ground for training purposes. A plastic-pipe section makes visible the cleaning action of the ball.

WHAT constitutes a clean sewer? Is it the restoration of flow after a stoppage, temporary increases of velocity by flushing, running an auger from one manhole to another, or periodic inspections by lifting a manhole and checking the line?

In Long Beach, Calif., a sewer is clean when all sediment is cleaned from the bottom of a pipe, all slime has been removed from the interior of the pipe, and all grease and other material have been purged. It is believed that sewer-cleaning methods must meet these requisites, if they are to be considered efficient.

Long Beach has approximately 600 miles of sanitary sewers, ranging in size from 6 to 48 inches in diameter. Because of the geographic characteristics of Long Beach, most of the lines have been laid on flat grades. Long Beach, therefore, requires the use of 21 sewer-pump stations.

During the last few years, like most Western cities, Long Beach has grown rapidly. Naturally, sewer problems have kept pace. In many new communities, as in the newer sections of Long Beach, the use of kitchen grinders has been adopted to dispose of garbage. Garbage grinders, although a luxury item, cause numerous problems so far as sewer maintenance is concerned. The grindings deposited in the lines cause accumulations of settleable solids, generation of hydrogen sulphide gases, large deposits of grease, and stoppages. These are the major problems to be solved by an adequate sewer-cleaning program.

A methodical program of sewer cleaning was instituted in Long Beach about 10 years ago. For the first several years, experiments were conducted with a variety of cleaning equipment: buckets, drags, parachutes, sand cups, wire brushes, and any number of Rube Goldberg ideas.

The most successful apparatus was a homemade

affair, a burlap-covered beach ball with a tag line attached. The ball, inserted into the line, reduced the flow and caused a high-pressure jet of water to move the sediment hydraulically ahead of it.

This device was used until the Sidu Company developed and perfected the Wayne Ball. The ball operates on the same principle as the beach ball, but with more efficient results. The principle of the Wayne Ball is to restrict the flow and increase the pressure of a stream of water, forcing all the heavy material ahead of it. At the same time, the apparatus scours and cleans the inside diameter of the pipe. This ball is used almost exclusively in the maintenance program of Long Beach.

The only time other sewer-cleaning tools are used is when the stoppage is such that the line is completely closed and sewage is standing in the manhole. In this case, flexible sewer rods are used to break the stoppages. After the line is cleared, a ball is put through to make sure that no material remains in the line. At least 75% of the system is "balled" each year. Because of grade and other difficult conditions, some locations are cleaned twice during a year.

Advantages of the Program

The advantages of such a program are manifold. Statistics have proved that 80% of the industrial-waste investigations and explosive gas conditions have been eliminated. Inspections of manholes, lines, and structures are not now considered necessary; stoppages have been reduced 75%. The generation of hydrogen sulphide and resultant line and structure deterioration and odor offenses have been reduced considerably. With the exception of certain force mains, chemical treatment of sewage has been eliminated. There has been a noted decrease in sand wear on parts of the pumps in the pump stations. The capacity and velocity of the lines has been increased in such a way that, had the program not been in effect, additional lines would have had to be built to accommodate the increased population and resulting increased capacity.

Costs have been kept on the maintenance program for the past two years and are summarized in the accompanying table:

A sample of the matter that is cleansed from a sewer laid on flat grades in localities where garbage-grinding units predominate. Analysis of the contents shows 12% bone, 38% egg shell, and about 50% sand, ground glass, and other materials.

Line Cleaning	*Amount Covered*		*Total*	*Unit Cost*	
	Feet	*Miles*	*Cost*	*Per Foot*	*Per Mile*
1951-52	2,063,538	391	$38,628.17	$.018	$95.04
1952-53	2,451,514	464.3	41,501.53	.017	89.50

The cost of the maintenance program, as elaborate as it may sound, is considerably less than a program designed around inspection teams. Regardless of whether an inspection team is used, lines must be kept clean. Removal of a manhole cover does not accomplish this.

Caracas Widens Streets In a Big Way

SOME 1,400 workmen and three contracting companies are ripping up another street in the heart of Caracas and tearing down 11 blocks of buildings to further the city's plan for traffic improvement. Sewer systems, power and light cables, water pipes, telephone wire and traffic light cables are being laid underground at the same time.

The $4,000,000 project on Avenida Este 1 is a part of the large Centro Bolivar development—a $300,000,000 plan* for modernizing the city's business section, now about one-third completed.

* See the front cover and pages 124-125 of THE AMERICAN CITY for July 1952.

Synthetic Detergents...

What they can do to water treatment, and one way to keep them from causing trouble

A mile downstream from the plant, foam extended 700 feet from the shore.

By A. R. TODD
Superintendent of the Water-Treatment Plant
Wheeling, W. Va.

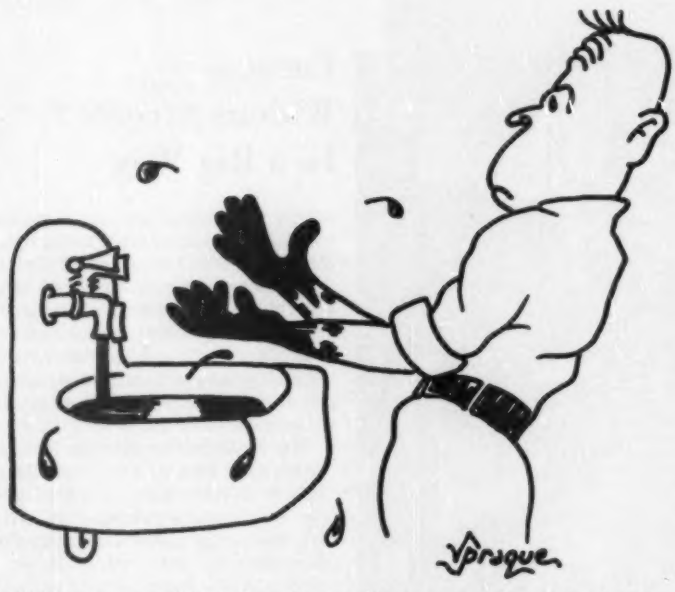
AFTER A PROLONGED dry spell last summer, water plants along the upper Ohio River faced a new kind of trouble maker. It was an experience that we will all long remember.

It all started during the last few days in November 1953 when the countryside received its first rain since the middle of July. The creeks which had been dry all summer started to flow, and we got our first indication of trouble.

Ironically, it was the day before Thanksgiving when the problem became acute; it was a fishy odor, not the aroma of turkey, that arose from the water. By November 30, the fish odor had developed into a "decomposed whale" odor.

To make matters worse, foam appeared everywhere. Suds, over 4 feet thick, blanketed the raw-water basin. It was 2 feet thick on the walks leading to the basin; and below Dam No. 12, which is just a mile downstream from the plant, the foam was from 11 to 24 inches thick, extending 700 feet from shore to shore.

It did not take a chemist or a detective to spot the trouble. Any 4-year-old who ever blew soap bubbles could recognize the material. However, to verify it, we collected 70 washtubfuls (we could have collected a million tubfuls), and brought them into a warm room where the bubbles burst. In all, we collected 4½ gallons of material which, upon chemical analysis, turned out to be almost pure synthetic detergent. We also filled a special tank holding 12,500 gallons of water on December 1, when the detergent concentration was at its highest. At 2:00 p.m. on that day, the detergent content indicated 12 ppm. The average for the day was over 4 ppm.



Black water poured forth from faucets all over town—the result of an increased iron content combined with chlorine in the finished water.

Purification Troubles

We successfully eliminated the intense fishy odor with an application of activated carbon at the rate of 40 ppm; or chlorine dioxide at four times our normal dose, which is 12 pounds of sodium chlorite per million gallons. However, this had very little effect on the taste.

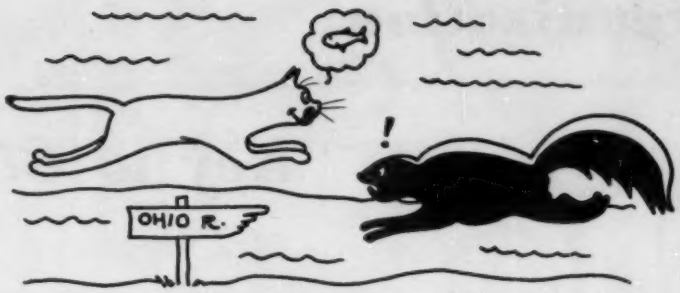
All kinds of difficulties with flocculation occurred. The floc simply would not settle and large particles would float on the water, suspended by the bubbles. The water passing through the filters was a light straw color, and the iron content of the finished water rose to more than 3 ppm. Black water, not red water, appeared from faucets all over town. The blackness of the water was caused by black oxide of iron, evidently created by the high chlorine content

that changed the red oxide to a black oxide. The detergent present seemed to hold it in suspension.

Ohio River water averages about 2 ppm of iron in the form of ferrous sulphate. Detergents seem to have a special affinity for the iron, with the result that the iron will not floc out at the pH normally existing in the water during purification. To remove the iron salts completely, it was necessary to raise the pH to an unprecedented 10.3 by increasing the lime feed by more than four times as much as is normally used.

This measure, however, complicated other features of the treatment. Plants on the Ohio River in this area must contend with a high phenol content in the raw water. These phenols produce a revoltingly offensive taste in the water. We normally control the phenol content by using chlorine dioxide. However, this oxidizer is not effective at a pH of 10.3. Phenols plus synthetic detergents make a trying combination.

Some will want to know if the detergents were removed by the purification process and what effects detergents have on the human system. We have no positive answer to either question. In dozens of tests, the average reduction of detergent content of the water before and after passing through the plant showed about 20% reduction. If these detergents prove to be damaging to the human system, the sanitary engineers will have an intensely difficult problem on their hands.



". . . the fish odor had developed into a 'decomposed whale odor'."

What happened here will certainly happen again elsewhere because of the ever-increasing use of synthetic detergents. Synthetic detergents produce no increase in BOD content of the sewage or industrial waste. Natural detergents or soaps do add BOD to the pollution load. Therefore, many industries find that they can save money if they switch to synthetic detergents, particularly when a sewer-service charge is made against them based on the BOD of the contributed waste.

One simple solution to all these problems is illustrated by our neighbor, Bellaire, Ohio, just across the river from Wheeling, which passed through this entire period of difficulty without seeing a bubble at the plant. Bellaire draws its drinking water from an infiltration intake that is 22 feet below the bed of the river. Their water was clear, sparkling, and without foreign taste, while the Wheeling plant floundered in suds.

Anchorage to Have a $350,000 City Auditorium

THE City Council of Anchorage, Alaska, has approved final plans for a new municipal auditorium to be completed by January 1, 1955. The old auditorium burned down in February 1953. Funds for construction will be provided from a $200,000 bond issue recently approved by the voters, insurance on the old auditorium, and a special fund for civic building purposes administered by the Anchorage Chamber of Commerce.

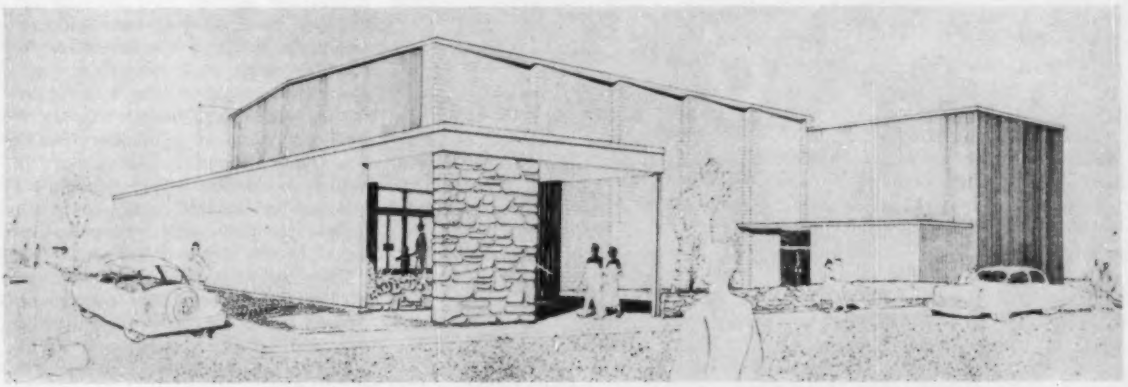
The $350,000 auditorium was designed by Edwin B. Crittenden, Anchorage architect. Seating will be provided for 656 persons. The proscenium will be 50 feet wide and 28 feet high, with a 14-foot forestage, which includes the orchestra pit.

The auditorium lobby has been designed to make it usable for exhibition purposes, and an additional lounge is provided in the basement. In addition to the projection booth, there is a control room over the lobby for control of lighting and direction of stage activities.

The auditorium exterior will be of concrete block, steel panels, and wood siding. Concrete block will be exposed on the interior of the auditorium.

Architect Crittenden was assisted by Harvey H. Johnson, construction engineer, Richard M. Stern, structural consultant, and Thomas E. Sparling Company, electrical consultants of Seattle, Wash.

VICTOR FISCHER
Executive Secretary
League of Alaskan Cities
Anchorage, Alaska



Architect's sketch of Anchorage's new auditorium, which is to be completed by the year's end.

Organization:

Key to Good Sanitation

By CARL D. WARNER
Commissioner of Public Works
Detroit, Mich.

FILTH, with its concomitant odors and insects, was once accepted as an unalterable element in the established Order of Things. Today, however, cleanliness has become our way of life. The responsibility for this modern-day practice is, to a great extent, in the hands of sanitation authorities. Municipal officials particularly are acutely aware of the need for the high sanitary standards that will maintain the health and welfare of their communities.

Operation of an efficient sanitation system for a large city is consequently a big job, beset with complex problems. For Detroit's 2,000,000 people, it currently means the use of 586 special trucks and collection crews making 1,350,000 stops every two weeks to collect wastes from the city's 4,200 miles of streets and alleys. It means disposing of almost a half-million truckloads of garbage and refuse annually in four incinerators and seven sanitary landfills operated by the city. It means a widespread effort that covers an area of 140 square miles and reaches into more than 500,000 private homes and commercial establishments.

In sanitation, as in all things, what was satisfactory yesterday is often outmoded today. Detroit's unprecedented growth during and after World War II rendered existing sanitation practices obsolete. Machines and methods were simply unequal to the vast responsibility which had been imposed on them.

The years 1946 and 1947 taxed the facilities of the Division of Sanitation to the breaking point. With housing in short supply, serious overcrowding existed in many residential areas with subsequent lowering of sanitation standards. Moreover, new equipment was not available in any quantity and our working force was undermined by the wartime drain of manpower.

Hard experience left no doubt in the minds of officials of the administration and the Department of Public Works that sweeping reforms in municipal ordinances affecting sanitation, as well as drastic revisions in department policies and procedures, were imperative if the growing challenge was to be met. Thus, in 1948, with the authorization and cooperation of a sympathetic city government, we set about developing a master plan designed to provide Detroit with a complete, efficient, and economical sanitation system.

A New Sanitation Code

Explicit municipal legislation concerning sanitation and adequate enforcement of that legislation were of primary importance. Accordingly, a policy of close liaison with the Department of Health and the Police Department was adopted. Members of these departments were invited to attend all planning sessions and spokesmen were encouraged to voice suggestions and recommendations. With all relevant thinking correlated before one group, we were able to view our problems in the light of the broadest possible perspective and determine which corrective measures were best suited to the city's needs.

Aware of the fact that our revised program would depend on the cooperation of our citizens, we established a community relations office within the department. Through this office, guest speakers were provided for women's clubs and other civic groups; programs and essay contests were conducted in schools; pamphlets and circulars were printed and distributed to householders; and the mass media of press, radio, and television were used to sell the department and its product—a cleaner, healthier city —to our residents.

Equipment Types Tested

Since "service" was the watchword of our revitalized system, considerable importance was attached to the purchase of new equipment. In order that we standardize on the best possible equipment for our needs, the department's Motor Transport Division and the Division of Sanitation were asked, jointly, to conduct exhaustive tests of the various makes and types of equipment.

To approach this task from a scientific angle, we decided to analyze the composition of normal loads. Several thousand truckloads of rubbish were separated and examined. From this study, we learned that 82% of all rubbish collected was burnable and could be sent to the incinerators. Furthermore, since burnable materials are normally more bulky than nonburnable, our problem was one of bulk rather than weight. This theory was further supported by a study of vehicle load charts which indicated a gradual but definite reduction in the weight per cubic yard of wastes collected by the department.

This automatically narrowed our choice of new collection equipment. Trucks had to be equipped with fully enclosed, compaction-type bodies, able to reduce these compressible wastes into a solid, dense mass and

thereby increase the load capacity. Open trucks, certainly, were obsolete.

Too, normal city expansion was moving our landfill operations to more remote locations. Thus, the greatly increased capacity of packing-type bodies would substantially reduce the number of trips to the dump.

Experiments with various body designs further narrowed the field. Some types were found to be impractical in the narrow downtown alleys. Others, bulky in design, presented problems of maneuverability; some with complicated operating mechanisms presented hazards to safety.

These extensive tests conducted by the Sanitation and Motor Divisions in conjunction with the manufacturers of packing-type units resulted in our decision to purchase 16-yard Gar Wood Load-Packers. The powerful compaction, the neat and orderly design, and the low loading height, as well as the simplicity and speed of operation, proved ideal for our operation. Today, we have 423 of these units in operation and 30 additional units scheduled for delivery.

Districts Established

Because of the vast area to be served and the difficulty of maintaining adequate supervision from a central office, it was decided to divide the city into districts, each to be under control of a district supervisor. Seven districts were plotted with areas determined by the concentration of homes and commercial establishments.

Each district, in turn, was further divided into subdistricts or sections, each in charge of a section foreman. A group of 16-yard Load-Packers, each with a driver and a crew of two men was assigned to a section, reducing the crew by one man and still collecting more refuse.

Each section was further subdivided into ten units, each unit representing an average work day. Thus, utilizing the standard 40-hour work week, every Detroit householder is assured of rubbish collection once every two weeks. Experience shows that such service is sufficient for all normal residential requirements.

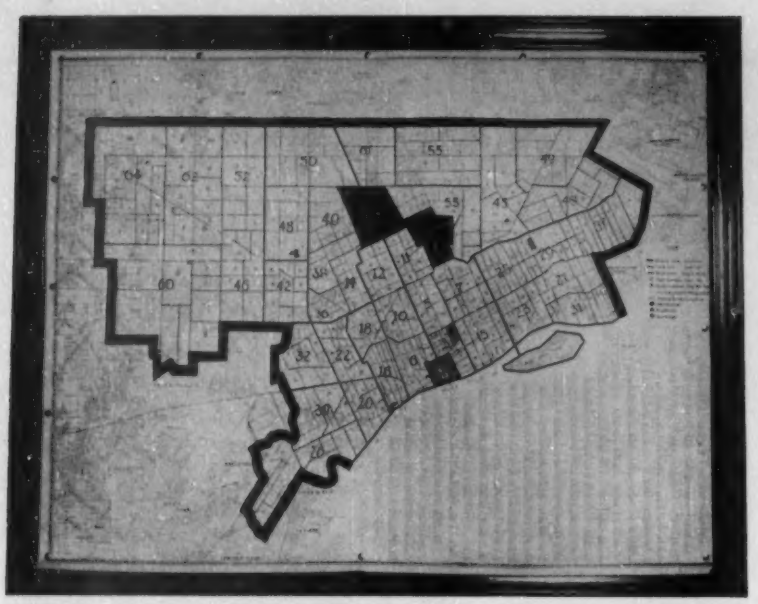
While municipal collection service is not supplied to manufacturing plants, the department does provide collection service for Detroit's 42,000 business and commercial establishments. These were grouped into 20 major business centers and 32 minor centers. Collection service is provided in the minor centers at least once every week and, in the major centers, twice every week. Both minor and major centers may receive more frequent service depending on their normal daily production and varying seasonal requirements.

In the Loop area, refuse is collected nightly, including Saturday, to prevent accumulation. To keep all alleys open for truck-delivery traffic during business hours, refuse cannot be placed in the alleys for collection until 4.30 p.m. At our suggestion, rubbish in this area is now being packed in paperboard cartons so that carton and contents can both be loaded, thus speeding collection.

To eliminate the long trip from downtown districts to suburban dumps, a central transfer station was established in the immediate area. Here the Load-Packers dump into a pit and refuse is reloaded by clamshells into 26-yard and 35-yard trailers with tarpaulin covers for the trip to the dump. Thus, our collection trucks remain in collection service at all times.

Providing Detroit with regular and frequent garbage collection again demanded a careful appraisal of the city's physical and climatic characteristics. We concluded that weekly gar-

In new residential districts, alleys have been eliminated and garbage and refuse are collected at the sidewalks. Collections are made on a fixed time schedule by means of a truck equipped with a Gar Wood packer-type body, ideal for Detroit's purpose.



A master map indicates clearly all garbage and refuse-collection routes throughout the City of Detroit. Note the division by district, section, and individual routes.

bage-collection service would be necessary for householders. Commercial establishments such as hotels and restaurants naturally require more frequent service than private homes. Provision had to be made, too, for this increased service.

Consequently, the entire city was divided into collection routes with the extent of each route determined by the relative concentration of dwellings and commercial establishments. Each of our existing 280 routes is equivalent to a normal week's work for one collection crew—the 40-hour week again being standard. Thus, weekly collection service is supplied for all householders. The householders wrap their garbage in several thicknesses of paper and store it in separate metal containers.

Commercial establishments, too, were surveyed to determine what frequency of service was necessary to maintain the highest sanitary standards. In minor business centers where food-serving establishments were fewer and of smaller size, a semiweekly collection service was established. In major business centers where garbage production is higher, more frequent service is provided. In the Loop area, at produce terminals and farmers markets, daily service is provided.

Seeking to cure a long-standing ill, new ordinances were prepared and approved that covered size, type, and placement of garbage containers. The practice of condemning improper containers was inaugurated and warning labels were affixed to all broken, leaky, and otherwise improper containers by the collection crews. Prompt replacement was ordered with the alternative of a summons to court.

Planning for Tomorrow

Current studies disclose that 22% of rubbish is collected by front pick-ups while the remaining 78% must be collected from the rear via alleys. We firmly believe that alleys can never be kept really clean when used as storage areas for garbage and refuse. The only practical solution to maintaining clean alleys is their elimination and the substitution of front pick-ups for all wastes.

We requested and recently received supporting legislation that will assist us in closing alleys. To bring the facts home to our citizens, a comprehensive educational program is under way which explains in detail our reasons for this action. Little opposition is expected from residents.

Another amendment to the Sanitation Code prohibits the use of concrete rubbish receptacles for single- and two-family dwellings after June 1954. Such receptacles will be allowed for apartment buildings and other multiple dwellings, but only if approved by the Sanitation Division. Thus, another bottleneck in Detroit's program of efficient collection service will be eliminated.

Additional educational efforts sponsored by the department are aimed at teaching householders to separate wastes and provide individual containers for burnable and nonburnable wastes. Such programs will eventually simplify the work of the department and enable us to supply even better collection service.

A 3-wheel Harley-Davidson motorcycle was rebuilt and equipped with 1-yard body, shovel, and broom for emergency clean-up work. It is dispatched to accident scenes to clean up broken glass, and performs other jobs impractical for a large truck.

The Annual Index

for 1953 is available without charge to subscribers for the magazine. Address requests to 470 Fourth Ave., New York 16, N. Y.

Excavation assumes rugged proportions when the new street has to be put down on plastic, swampy soil. An Allis-Chalmers tractor equipped with a front-end loader scoops up the dirt.

Mains are relaid to conform with the new grade. Pit-run gravel is used to backfill the trenches. A Schramm trailer-mounted air compressor powers a tamper to compact this fill.

Native granite is often used for curbs and catch-basin construction. This inlet is typical of those used in Portland.

A Firm Foundation Is Needed

. . . when Portland, Maine, rebuilds streets in a swampy section of the city

BACK IN 1927, a municipal developer of Portland, Maine, built some streets in a swampy area by supporting them on old wooden ties. The city has been replacing them ever since. The most recent reconstruction took place last summer on a 3,500-foot stretch of street on Maine Avenue.

When building on swampy, plastic soil, such as that underlying this street, Commissioner Bryan O. Whitney believes in going heavy on the foundation work and not so heavy on the surfacing. At best, any pavement laid on this unstable, plastic soil may cause trouble. With a bituminous macadam surfacing, difficulties are a lot easier to get at and correct than when the street is covered with a rigid pavement.

Pit-Run Gravel Placed on Subgrade

The first step, after tearing out the old, rotted ties, and bringing the street to permanent grade, was to place 18 inches of gravel on the subgrade. This pit-run gravel, taken without screening or washing, is naturally graduated in size, giving it some stability. Yet, its open structure prevents water from rising and softening the upper portion of the pavement.

On this base, 5 inches of crushed stone is placed in two layers; each layer is choked with sand to give it stability. This surface is then rolled and shaped so that it can receive a single-course bituminous macadam surfacing averaging 3 inches in thickness. The top is sealed with a light application of asphaltic emulsion.

This construction, Mr. Whitney finds, is adequate to handle relatively heavy traffic. The street that was rebuilt last year has a 36-foot roadway width and serves a bus route. It lies in a predominantly residential neighborhood. It will be strong enough, he believes, to carry this type of load, yet not too resistant to street cuts.

Many residential areas of the city have not been wholly developed and new service cuts will have to be made in the future.

All the pavement is being constructed by contract. The department offers alternate types of similar general construction strength for the contractor if he wishes it. The work was supervised by Howard F. Mitchell, division engineer.

MORE than two years' operation under a new zoning ordinance adopted in Grand Rapids, Mich., in September 1951 has proved the workability of the procedure by which the ordinance was drafted and the practicability of its new provisions for sign and billboard regulations.

It is with the hope that the line of reasoning used in enlisting the cooperation of the sign and billboard industry will be helpful to other cities, that this type of zoning regulation is presented for wider discussion and use.

It should be understood, of course, that for cities of less than metropolitan size, more restrictive provisions than those of the Grand Rapids ordinance will ordinarily be desirable.

S. B.

Successful Sign and Billboard Zoning

By SCOTT BAGBY
Planning Director-Consultant
Grand Rapids, Mich.

WHEN THE NEED for a new zoning ordinance for Grand Rapids was under discussion three years ago, the problem of billboard regulation was taken up with the billboard interests in the city.

We first found out from our local billboard people what their standards for desirable location were, and we found that billboard space sells in direct proportion to its visibility. We were pleasantly surprised to find complete agreement that there should be no billboards in residential or neighborhood business zones.

Using these principles, we began in the industrial zones, where there is the least need for protection of residential property. The "D-2" heavy industrial district permits unlimited billboard use. In the "D-1" light industrial district, billboards totaling up to 300 square feet in area are permitted for each 25 feet of frontage.

Billboard Provisions Tighten Up

As our zone districts become more protective and extend into or border on our residential districts, this provision tightens up somewhat. In the "C-3" central business district, billboards totaling up to 300 square feet in area are permitted for each 50 feet of frontage. In the "C-2" suburban business district, up to 300 square feet of billboard space is permitted for each 75 feet of frontage.

In the "C-1" neighborhood-business-service zone, billboards are prohibited except in such blocks where the zoning extends the full length of the block and does not face a residence zone, in which case up to 300 square feet of billboard space is permitted for each 100 feet of frontage.

Regulation of Signs

The problem of signs was approached with the help of our sign companies on the basis that signs were regulated by zoning as a service and protection to the potential customer rather than as a prerogative of the store owner and the sign industry. We agreed that uncontrolled competition for bigger and bigger signs, as one store shut off other stores' existing signs by projecting far in front of them, was not good for business and was not good for the convenience of the public, which needs to know where they can meet their shopping needs.

Again approaching this problem from the standpoint of a necessary service to the public and a protection to business and adjacent residence-zone districts, signs are not regulated in our industrial zones except through the building code, which prohibits signs extending over the curb and which requires adequate structural safety.

Signs in business zones, on the other hand, were considered in an entirely different category. The new zoning ordinance had purposely set up four commercial districts to meet four entirely different types of business needs. The "C-4" general commercial district permits ordinary business uses but also includes light manufacturing, warehousing, and motels. Because of its location, the "C-3" central business district is a special zone designed for our downtown business area. The "C-2" suburban business districts provide regional shopping facilities for several neighborhoods. The "C-1" neighborhood commercial district was designed primarily to provide service to the adjacent residential areas and was carefully drawn in such a way that it could serve our better areas as well as protect them.

It was agreed that our neighborhood commercial districts, therefore, need only give information and identification, and no signs are permitted except those which pertain to a permitted use on the premises, are attached flat against the building, do not project above the roof line, and do not face the side of any adjoining lot in a residential district. We restrict the size of business signs through the building code as to safety in relation to the way in which the sign is erected.

Intensively Used Business Zones

The key problem of sign regulation, then, came from the three more intensively used business zones. It was apparent, when approached from the standpoint of convenience to the potential shopper, that a block of existing signs visible to a pedestrian or a motorist from one of the street corners would be most valuable to the

merchants owning the signs and most convenient to the public if all the signs could be seen and identified.

Sight Angle Provisions

Based on this approach, we then worked out a basic principle that the sign on practically any existing store in any existing block would adequately advertise the business and could be conveniently seen by the buying public if a one-to-five sight angle were protected by zoning regulations. Since there are smaller stores that generally occupy at least 25 to 30 feet, we permit any sign in any location in the "C-2," "C-3," and "C-4" business districts to project up to 3 feet. As the width of any particular business extends beyond 30 feet, an additional foot of overhang is permitted to project to as far as 2 feet back of the curb line at the ratio of 1 foot of projection for each 5 feet of space in excess of 15 feet between the sign and the nearest adjoining business or property.

The reasonableness of such an approach is obvious. A large store with 100 feet of frontage with a 10-foot projecting sign in the center of this frontage will shut off no more view of other signs than a 3-foot projecting sign on each of four 25-foot business uses, whether the signs be viewed from one direction or another. But regardless of the amount of frontage, if the owner chooses to place the sign on a wide building away from the center of his ownership and toward an adjacent ownership he must reduce the projection of the sign and keep within the 1-to-5 sight angle.

Only Two Appeals

When such a regulation was first being considered and long before its adoption we called in all of the sign companies, since many signs are ordered months in advance of installation. In most cases signs which had already been ordered were completed and permits for installation given before the passage of the ordinance, and there were a few cases where the Board of Appeals permitted the installation of signs projecting farther than the ordinance permitted when the owner and the sign company were able to show that the sign had been ordered prior to the ordinance. Within a few months after the passage of the ordinance, however, this was no longer a problem. During two years of operation there have been only two appeals, one involving a sign which was to be moved from another city and another involving a banjo-type filling-station sign on a heavily traveled state highway.

The Grand Rapids Real Estate Board won the Clinton Snyder trophy for having contributed the most to its community through the work its zoning committee did in helping to formulate this progressive new ordinance.

EDITORIAL NOTE: Printed copies of the zoning ordinance are available at the office of the City Clerk, City Hall, Grand Rapids, Mich., for $1.

Other New or Unusual Provisions Of Grand Rapids' Zoning Ordinance

1. It contains new provisions on existing platted lots which make possible the development of a high-grade residential zone requiring large lots in spite of old or pre-automobile-age plats in the area.

2. It requires parking space with all new buildings and permits this parking in residential areas adjacent to business or industrial zones under adequate safeguards to protect the residential area.

3. It prohibits any further residential, church, or school development in industrial zones, protecting these zones just as strictly for industrial use as the residential zones are protected for residential use.

4. It provides for a transition zone between business and residential areas to encourage such uses as doctors' offices, professional buildings and the like, designed in character with adjacent residences, as a positive means of effecting the necessary transition from business to residential areas.

S. B.

Regional and Local Planning and Zoning Stressed at Development Conference

A THREE-POINT PROPOSAL for effectuating regional planning within the state highlighted the live-wire Eighth Annual Connecticut Development Conference, which was held in West Hartford on January 13, and attended by 250 planners, zoners, and others interested in community development.

The program, outlined by William H. Mortensen, Chairman of the Connecticut Development Commission, calls for the State Development Commission to provide leadership in the organization and preparation of regional plans, in the following steps:

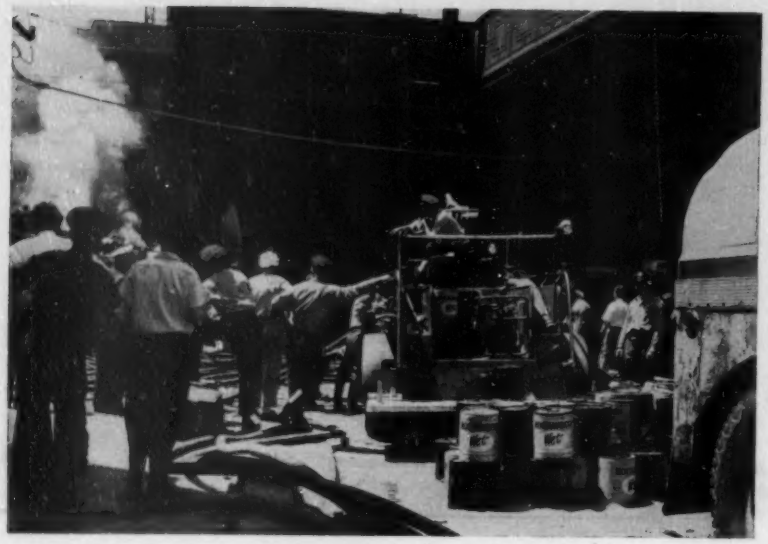
1. Define the logical economic regions where cooperative action is necessary to assure the orderly and economic development of the State of Connecticut.

2. Provide the technical staff to make studies and basic development plans for the use of local planning and zoning commissions when they consider regional problems. These regional plans would only be outlines of conditions and needs which would be developed and implemented by the town planning and zoning commission.

3. If more detailed planning is desired at a regional level, the municipalities in the region, or a substantial majority of them, would vote to organize a regional planning authority under a predetermined formula of financial support that would equalize the amount each town would provide once it committed itself to such a program. Whether or not state funds would be provided for the more detailed planning on a matching, or other basis, is a matter for further study.

Participants in the conference, which was opened by Governor John Lodge, agreed on the need for regional planning and greater cooperation between municipalities in planning with care for the efficient use of Connecticut's limited usable land areas.

Professor Louis B. Wetmore, Director of the Center for Urban and Regional Studies at M.I.T., served as moderator for a four-hour discussion of the major conference theme: "Is Local Planning and Zoning Out of Date?" Representatives of local and state governments, professional planners, private-enterprise builders, and shopping-center experts, and consultants on regional and county planning took part in this session.



"Wet water" is being applied to the ruins of a warehouse containing baled rubber.

Every Philadelphia Fire Truck Carries

Dry Chemical

Philadelphia Fire Chief George Hink (left) and Fire Commissioner F. L. McNamee inspect the new chemical supply truck.

Extra supplies are carried by two special service trucks that can also fog, foam or pour wetter water

By GEORGE HINK
Fire Chief
Philadelphia, Pa.

THE Philadelphia Fire Department, with a $15,000,000 budget and 3,000 men on its roster, is the first large city department to equip all its fire trucks with dry chemical.

Dry chemical is specially treated sodium carbonate, or baking soda. Though it was known that baking soda could smother fires, until a few years ago it could not be used in extinguishers because it absorbed moisture from the air and caked, clogging the extinguisher. The chemical is expelled from fire extinguishers in the form of white powder, and kills fire speedily.

Philadelphia has 71 engine companies, 30 aerial-ladder companies, 10 rescue squads, one special service, two airport companies, and three fire boats, with a total of 203 vehicles and three fire boats equipped with the Ansul Chemical Company's newly developed long-range

nozzles and extinguisher. All chief officers' cars carry a dry-powder unit.

Since all Philadelphia fire trucks are equipped with 30-pound units, a total of 180 pounds of dry chemical is available each time a box alarm is answered. Should more be needed, "Special Service 100'—an all-purpose heavy-duty unit — brings to the scene an extra 510 pounds of dry chemical, and any other agents suitable for extinguishing flammable liquid and electrical equipment fires. Backing up this unit is a chemical supply truck (SS-101), which carries another 500 pounds of dry chemical, extra cartridges to expel the powder from the extinguishers, and extra supplies of Foam-Alco and wet water.

Dry Chemical Proves Effective

Early instruction with dry chemical was under the supervision of Howard Meyers, Safety Director of the Atlantic Refining Corp., and representatives of the Ansul Chemical Company, whose equipment is being used. This training has paid off.

Recently, a gasoline tank was ruptured in a collision of two automobiles. Fire enveloped the two cars, and burning gasoline started to run down the street. Within one minute after the fire-fighting apparatus arrived and started spraying the baking soda on the fire, the blaze was out.

In another case, static electricity ignited gasoline pouring from a tank truck into an underground tank at a police station. Without turning off the valve, the driver of the truck drove off, pulling out the gasoline hose and causing burning gasoline to spread all over the yard. Using dry chemical again, the firemen extinguished the fire in seconds. Often the fireman's job is not finished when the fire is out. After extinguishing another fire of burning gasoline on the highway, one Philadelphia fire crew spent the next hour washing down the highway to guard against reignition.

Special Service Truck 100

I have mentioned our Special Service Truck 100 which provides us with an adequate supply of dry chemical. It also carries wetting agents and foam, and can pour water, fog, straight foam, fog foam, straight wet water or fog wet water through its turret, its master streams, its handlines, its relay streams, or from extinguishers mounted on its sides.

SS-100 played an important part in the extinguishment of a rubber warehouse fire that started June 22, 1953, and was put out two days later. When this fire broke out there was 1¾ million pounds of baled rubber involved, and the danger was that the molten rubber mass would erupt, spread out over streets and pavements into sewers, endanger the properties in the area, and threaten the firemen.

It was decided to try to get enough foam blanket over the outside edge of the fire pile to eliminate the threat of spreading fire and involvement of the adjacent railroad and two other warehouses. Our RCA two-way radio quickly brought truck SS-100 which put a fire-smothering, heat-insulating, foam blanket over the perimeter of the fire on three sides and part of the fourth side. This contained the fire.

We then returned to standard fire-fighting procedure, keeping the fire under control with master streams. After a survey of the fire, it was decided that a wetting agent would be worth a trial, and SS-100 was put into service at 11 a.m. June 24 with the unorthodox but successful application of the wetting agent through its

Deputy Chief George Meskill, in charge of Philadelphia's fire-training school, instructs Lt. Norman Thomas in the use of dry chemical applicator in extinguishing burning oil.

proportioners, its handlines, and its master streams and nozzles.

As the wet water took effect, and subdued the blaze at each area, more streams were shut off, but kept charged and ready. The wet water lines were advanced until no flames or smoke were visible from any point, and in 1 hour and 52 minutes after the initial application of wet water, the fire was officially pronounced out.

Another important Philadelphia "first" was the Fire Department's Emergency Plan, set up to cope with any emergency fire situation that might develop during the city's crippling transportation strike last winter. Because of the inability of fire trucks to negotiate streets overloaded with traffic during the transit strike, many extra fire hazards were created. The commissioners and chief officers labored many nights in advance of the strike to develop a program of deployment that provided the citizens of Philadelphia with adequate fire protection during the strike.

A Short History of the Philadelphia Fire Department

Philadelphia's history of maintaining an up-to-date alert fire department dates back to 1736, when Benjamin Franklin organized the first volunteer fire department in the United States. Known as the Union Fire Department, the unit consisted of 30 men, who supplied their own water buckets and linen salvage bags, which were then used to carry property out of burning buildings.

In 1871, Philadelphia converted its volunteer outfit into a paid fire department of 22 companies, and it has been expanding ever since.

Small Communities Need

Capital Expenditure Budgets

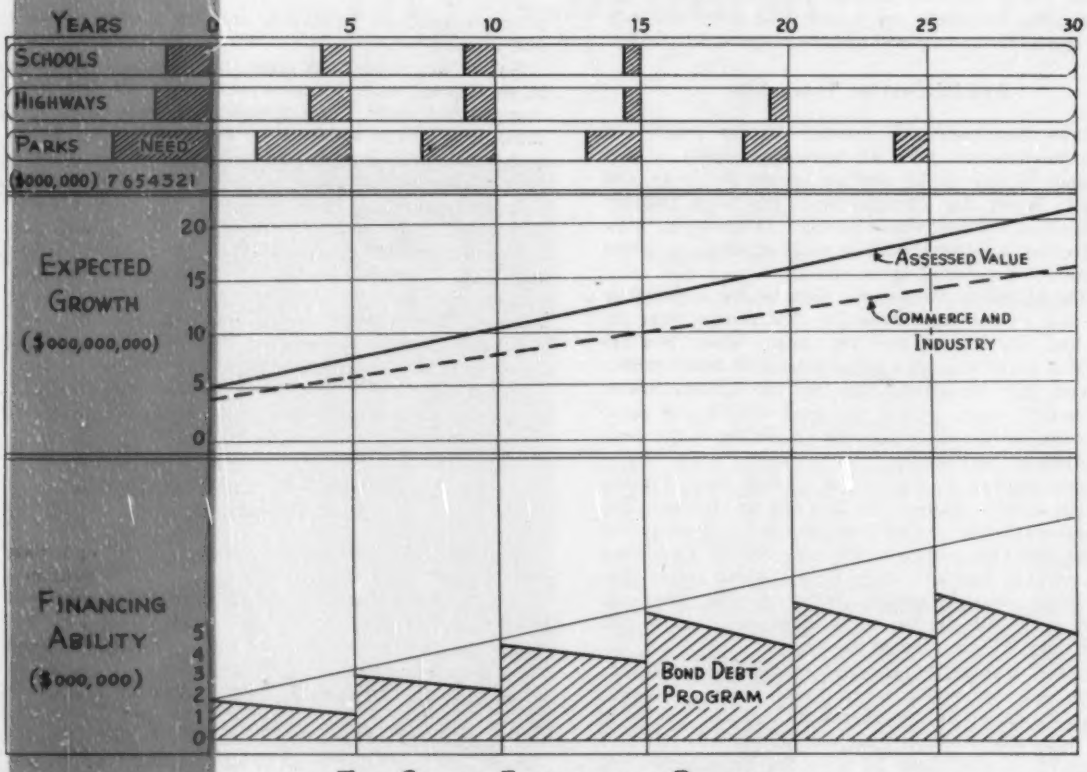
By FRED C. ARMSTRONG
Professor
Arizona State College
Flagstaff, Ariz.

"WE'RE LIKE THE MAN in the story who got on his horse and rode off in all directions." That is how one official of a small city recently described his city's capital expenditure program.

Unfortunately, his appraisal was too sound for comfort and his counterparts in small communities over the country are likely to agree with him. The larger cities have been solving their capital expenditure problems by programs based on sound planning, but many small ones, even in the face of rising costs, go on with haphazard programs. Sewer lines are built which are overloaded within a year of beginning operation. Schools, it has been found, are overcrowded on opening day. These and similar incidents are not only unfortunate and wasteful, they are unnecessary.

It is not that city administrators do not have plans; they do. But these plans are usually in the back of their minds; they are not spelled out for the public to understand, and they are not based on an understanding of how they are to be financed or the order in which the expenditures are to be introduced.

The best way to control a capital expenditure program, and incidentally to get support for it, is to have a capital expenditure budget. When so many groups are ready to aid in the construction of capital expenditure budgets, it is surprising that many communities are without them. Private organizations, state planning commissions, and colleges and universities all look on the giving of aid in the creation of capital expenditure budgets as an opportunity to serve the community. But above all, the capital expenditure budget is not difficult to construct. The city can do its own, and there is no better way for a city administration to un-



THE CAPITAL EXPENDITURE BUDGET

derstand the needs and possibilities of its community.

To see how simple it is to draw up a budget and to see what the community gains from having one, let us go through the steps in its creation.

The *first step* is to project the growth or decline of the community for 30 or 40 years. The length of the projection should be in accord with the anticipated life of any contemplated capital improvements.

While growth is usually thought of in terms of population, this projection must also consider the qualitative aspects of the future growth or decline of the community. Is the community likely to develop as a residential, commercial, or industrial center, or all of these? Is it likely to consist of an aging group of retired people, or of a young group? These and similar questions should be included in the projection. As we shall see later, these projections need not be accurate; indeed, only by the greatest chance would they be accurate.

Projecton of the Future

This first step is probably the most interesting part in the creation of the capital expenditure budget. The whole community may be drawn into the projection of the future of the community. Service groups, such as the Chamber of Commerce, the Lions and Legion Clubs, etc., can help in this part of the projection and the result of the review is to get the whole community behind the program.

The *second step* is to calculate the needs of the community, in way of capital improvements, to conform to the projected growth or decline. To do this, of course, there must be an inventory of present assets and liabilities of the community.*

Tying of needs to the ability to finance them is the *third step*. While finances are a difficult problem, to be sure, when they are planned out, many of these problems disappear. A large part of the program is likely to be revenue-producing and, therefore, self-liquidating. The program may be balanced by carrying on, at the same time, projects which reduce and increase the tax base.

There is the possibility that the capital expenditure program will result in growth of the community and increase the tax and bonding base. Certainly the public is more likely to support bonding programs when they have an over-all picture of the over-all purposes and objectives.

Schedule of Needs

The fourth step is to set up a schedule of needs for a short period, say five years, and to establish a priority rating for those needs.

There should be considerable agreement among members of the community on this priority arrangement if difficulty and opposition to the program are to be prevented. Then each year, the capital expenditure budget should be reviewed and altered to fit any unusual developments. These periodical reviews of the budget should give it flexibility, a check on progress, and should minimize those necessary errors in prediction.

That is all there is to the capital expenditure budget. It is simple to construct. It gets the community behind the program. And, it is not binding on the administration while it does give purpose to the expenditure program.

How will it look? It might look something like the accompanying graph.

The Graph Explained

Notice that the graph has three panels. The upper panel is the capital expenditure budget itself. Only three projects are contemplated: schools, highways, and parks.

Horizontally, the chart is divided into years from zero, the starting date of the program, to 30, the end of the projection. To the left of the zero year in the capital expenditure budget one sees in bar-graph form the budget. The clear part of the bar indicates the present status of the project and the shaded area represents the proposed program. Thus schools need $3,000,000; highways $4,000,000; parks $7,000,000; a total of $14,000,000.

As one moves horizontally from zero to five, to ten years, etc., it is possible to see how the community plans to ration its ability to make the capital expenditure by observing the reduction in the shaded area.

The second, or center, panel is labeled expected growth of the community. One sees projected here, first, the growth of industry and commerce and second, the growth of assessed valuation. The two should be fairly closely related.

The third, or lower, panel indicates the bond-debt limit. The debt limit is related to the assessed valuation, of course, but one must take care to notice that the scales on the vertical axis are different in the second and third panels. This is necessary because the bond-debt limit is usually expressed as a fraction (e.g., 5%) of the assessed valuation.

The shaded area in this lower panel shows how a bond-debt program could finance the projects and still fit in under the bond debt limit.

So great are the benefits of having capital expenditure budgets there is a movement in some states to require their preparation. That should not be necessary. Let the capital expenditure budget be a community project. It is the best answer to the question, "What is the administration doing for the city?"

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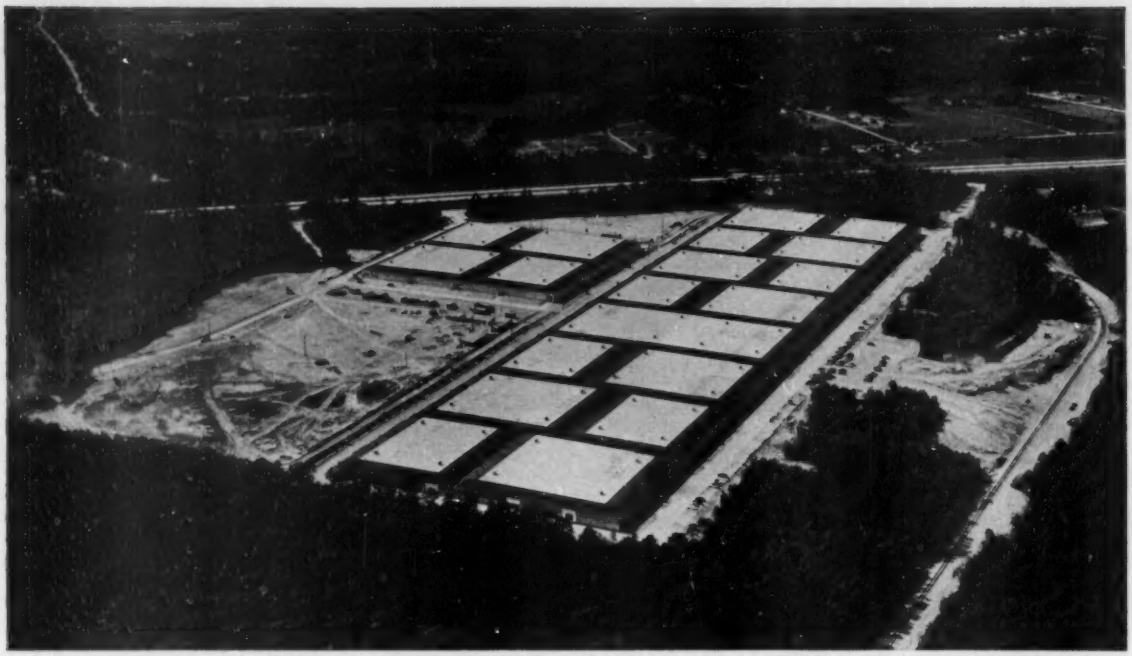
* The Urban Land Institute's *Planning Community Facilities for Basic Employment Expansion* and the Department of Commerce's "Short Range Forecasting for Municipal Purposes" and "Population Analysis of Small Areas" will be of aid in this step. In fact, there are any number of practical, easy to understand guides which the small community can use in this phase of the development of the expenditure program.

Sanity and Statesmanship

FROM the somber possibilities of modern warfare, said Professor A. V. Hill, of University College, London, at the Columbia University Bicentennial Conference on "The Metropolis in Modern Life," we can see "that the future well-being of mankind does not depend alone on scientific and technical development and agricultural and industrial expansion, important as these are, but at least as much on good will, friendliness and tolerance, on sanity and reasonableness, and on the art and craft of statesmanship."



Rarely is any city required to meet sewage-purification requirements as exacting as those imposed on the federally operated 600-employee Parr-Franconia warehouse project, which is being constructed about 10 miles south of Washington, D. C.

Esthetics Was the Stumbling Block

An unusual little sewage-treatment plant employs contact aeration to clear away obstacles

By J. E. PECK*
Chief Engineer
Ward & Bolles, Architects
San Francisco, Calif.

OUR SEWAGE-TREATMENT PROBLEM was most unusual. We were not allowed to discharge *any* sewage into the receiving stream, regardless of the degree of treatment or sterilization. Esthetic objections, plus the possibility that the purified sewage might adversely affect the water-treatment facilities at Fort Belvoir, located about 4 miles downstream, created the difficulty.

During January 1953, the $7,500,000 Parr-Franconia Warehouse was being readied for government occupancy, but no practical solution had yet been found for disposal of the domestic waste contributed by the 600 federal employees who would begin to move in. Septic tanks were ruled out because tests showed that the soil conditions were unsuitable. Pumping the sewage to an acceptable watershed was not practical because of legal difficulties and excessive costs.

Various other measures were rejected in turn by the Army Engineers, Water Pollution Control Division of the U. S. Public Health Service, local health authorities, County Zoning Board, State Health Department, Virginia Water Control Board, and other interested agencies. The problem of providing ample health protection was not so difficult to overcome as trying to satisfy esthetic requirements.

While making our studies we were impressed by the number of treatment plants adjoining housing developments in the Washington, D. C., area. Although some stood only about 100 feet from homes, there seemed to have been no esthetic objections to these projects. Furthermore, the treated effluent from these plants was often more pure than the water of the small receiving streams into which it flowed. Children apparently were permitted to wade in these streams which during dry weather consisted almost entirely of treated effluent. These treatment plants were all licensed under process patents owned by Contact Aeration Company in accordance with designs developed by Llewellyn B. Griffith, consulting engineer.

We were particularly interested in the excellent operating reports of two of these plants. One was built about four years ago by the Town of Vienna, Va., to

* Mr. Peck is in charge of the construction of the $7,500,000 Parr-Franconia Warehouse Project, located on the Shirley Parkway, about 10 miles south of Washington, D. C.

serve 2,000 persons; the other was at Rockville, Md., and served 1,000 persons. (See THE AMERICAN CITY for February 1953, pp. 86-88.)

The small plant at Rockville was very compact and about the size we would require. Therefore, we employed Mr. Griffith as our consulting sanitary engineer and made arrangements to have the Contact Aeration Company license us so that we could use its sewage-treatment process patents and designs.

The County Zoning Board was familiar with Mr. Griffith's work in providing treatment facilities in several housing developments. All other agencies agreed that this type of treatment was capable of a high degree of purification.

However, all expressed esthetic objections. No one liked the idea of even highly purified sewage effluent entering a stream used for water supply. The treatment had to be designed so that the final effluent did not appear to enter the stream directly.

Percolation Tests

Soil tests at the plant site showed that the partly treated sewage could not be carried off by subsoil drainage. Thoroughly treated sewage, in contrast, showed an ability to percolate into the soil satisfactorily. It was evident that if the effluent were drained into the ground and later found its way to the stream, the repugnance would be overcome.

Other minor objections were raised that involved improbable emergencies. We were able to overcome them by pointing to the satisfactory performance of a similar plant—as the one at Vienna—over a significant period of time and under all reasonable emergencies. The Municipal Services Company, the organization operating the plant, was requested to make a complete report to the State Water Control Board on the operational data. This report indicated that the Vienna plant treated 232,000 gallons per day of domestic sewage with a BOD pollution load equivalent to that contributed by 1,840 people. Treatment had consistently reduced the BOD and suspended solids more than 95%. This plant had been designed to provide 90% reduction for 200,000 gallons per day of typical domestic sewage.

Services of an operator were required for only one hour per day. Repair and maintenance costs have been minor. Monthly operating costs ran as follows:

Chlorine	$12.00
Repairs, shelves, tools, paint, equipment, plant replacements	10.00
Average electric-power costs	45.00
Operator	Contract Basis

Although the Water Control Board was not primarily concerned with odor, flies, or mosquito nuisances, the Municipal Service Report disclosed that, in the three-year history, no odor or insect nuisance had been reported.

One of the most serious questions asked was, "What would be the effect of an ordinary power failure, or failure of the operator to report for several days?" To simulate a power failure, Municipal Service simply turned off the power for four hours and ran tests for the next eight hours. Then they discontinued all manual operations for seven days. Results are tabulated below.

Results of Tests Following Power Failure

	10 a.m.	11 a.m.	12 M	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.
Dissolved Oxygen, ppm	10.00	9.00	9.00	6.80	5.20	7.00	9.00	8.00	8.80
Settleable solids, ml/l	0.03	0.03	0.01	0.00	0.00	0.01	0.02	0.03	0.03
Chlorine residual, ppm	0.30	0.20	0.15	0.15	0.10	0.10	0.15	0.20	0.26
BOD	4.90	5.10	7.60	7.30	8.00	7.70	9.20	8.30	6.30

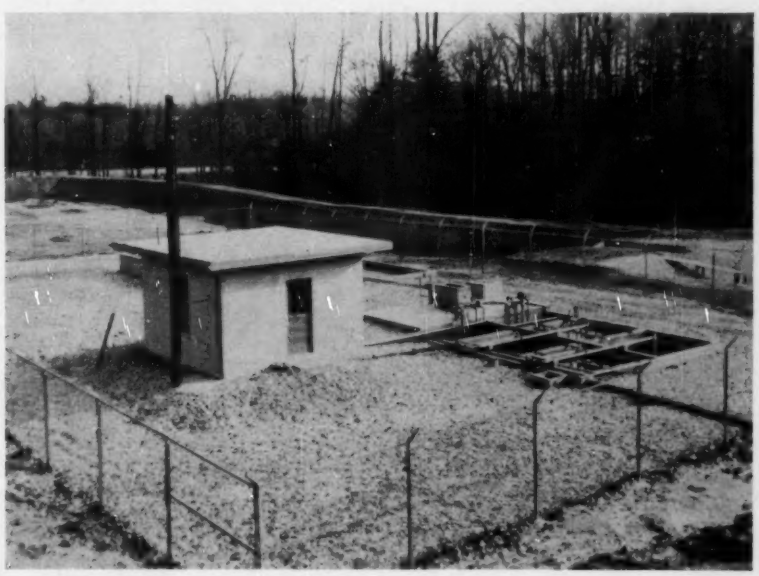
On April 5, 1953, the investigators tested the plant for automatic unattended operation. No one visited the plant for one week. Treatment results are below:

Results of Automatic Operation

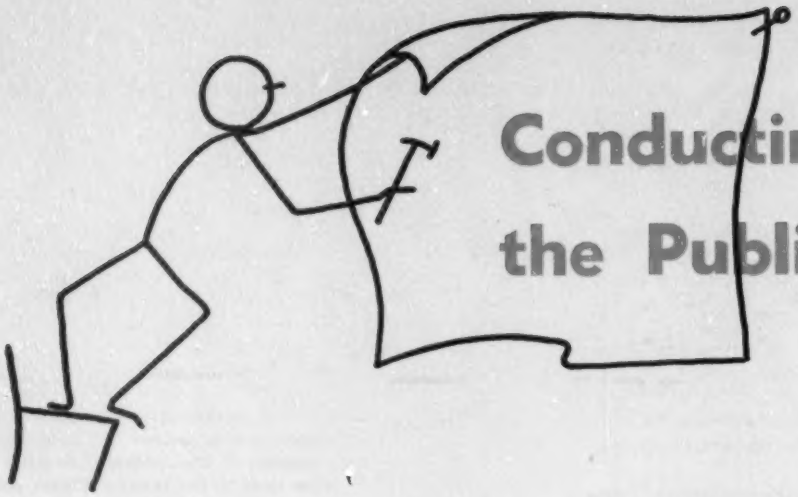
	6 p.m. 4-5-53	9 a.m. 4-7-53	9 a.m. 4-8-53	9 a.m. 4-9-53	9 a.m. 4-10-53	9 a.m. 4-11-53	9 a.m. 4-12-53
Dissolved Oxygen, ppm	6.30	8.10	7.40	8.20	8.50	7.80	7.20
Settleable solids, ml/l	0.02	0.02	0.03	0.03	0.04	0.04	0.03
Chlorine	0.20	0.30	0.30	0.30	0.30	0.30	0.30
BOD, ppm	6.30	5.80	4.30	3.80	3.90	4.50	4.20

Encouraged by these results, we submitted plans for a Griffith-type plant. It would discharge its effluent

(*Continued on page* 155)



A pocket-size treatment plant and percolation bed resolved esthetic objections.



Conducting the Public Hearing

By FRANK F. STEARNS
Director-Secretary
The City Planning Board
Miami, Fla.

THE BOARD MAY INITIATE public hearings on its own proposals or on other suggestions and proposals to amend zoning districts or text of zoning ordinances and on other matters pertaining to the City plan.

Where proposed changes of zoning classification concern important or sizable areas, we generally use the daily papers for display advertisements with maps illustrating existing land uses and other conditions in the general area.

In most cases legal advertisements are used but we set these up in such a way as to show prominently the location of real estate and the proposed change and date and place of hearing.

Each hearing must be advertised in a local daily paper at least once not less than ten days prior to hearing.

Notice to Property Owners

In addition to the legal advertisements which meet the requirements of the law of notification, copies of such advertisements are mailed as courtesy notices to owners of record of real estate in affected areas and to representative property-owner groups, local improvement associations, and other affected interests.

These courtesy notices include a questionnaire where interested persons can check as approving or objecting to any proposal; also space for comments.

Owners are invited to express their views on these forms and to mail them back to the Board office before the hearings.

Where a petition or proposal concerns any part of a zoning map, a list of owners of record of real estate located in the area and within 375 feet therefrom is secured and assembled and a letter-size map of the area is prepared showing existing land uses and the nature of improvements in the locality. Included in the file is another letter-size map of the same area, showing subdivision blocks and lots and symbolized zoning districts and the area proposed to be changed as shown by cross hatching. "Approvals" and "Objections" as taken from the returns are checked and shown on the complete list and on the subdivision maps. Green check marks opposite names on the list and solid green coloring on lots indicate "no objection." Red checks on list and solid red coloring on map indicate "Objections." All real estate owned by petitioners is shown in solid yellow.

This procedure helps to give the staff and the Board members an advance picture of the opinions of interested owners and the locations and zoning and relationship of their real estate.

Agenda Mailed in Advance

Agenda for each meeting with every hearing as a separate item, are mailed to members of the Board, generally a week before the hearing. The location of each parcel or area is prominently indicated at the beginning of each item. Then comes the legal description and, finally, information as to the proposed change.

Numbers are shown at the bottom of each item indicating pages in Hopkins Plat Books used in the Planning Office and by real estate brokers and others; also numbers of pages in the official Zoning Atlas, published in two sizes, copies of which are in the hands of members of the Board and staff. These numbers are helpful for quick reference to maps to find pertinent information as to localities.

Use of Maps

At the hearings large-scale maps prepared by staff members are displayed and explained. These show existing land uses and other important information.

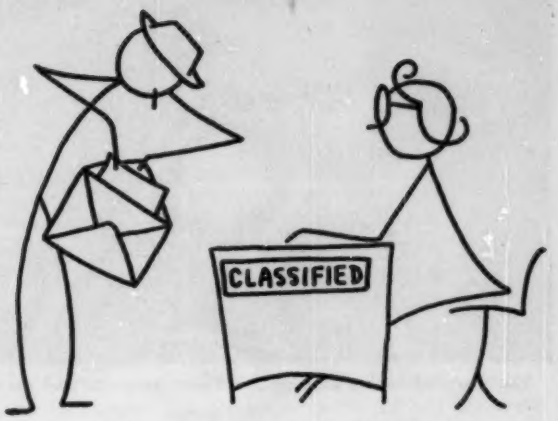
The Chairman generally advises those who appear in each case that their previously received approvals and objections have been noted and registered and will be given utmost consideration and suggests that it will not be necessary for everyone present to speak unless they so desire and have some new information to submit and also suggests that discussion be limited as much as possible to representative speakers.

Proponents of a proposed change are invited to speak first. Objectors, if any, are then given opportunity to express their views. Petitioners are given final rebuttal.

Immediately at the conclusion of each hearing, the Board may vote to recommend the granting of a petition as advertised or may recommend a lesser change than requested and may attach conditions for protection of neighboring properties. Such limitations are generally attached to recommended variances.

Or, the board may deny a requested change or exception. In such

This carefully planned procedure, as evolved by the Miami City Planning Board, was described by the author at the National Planning Conference held recently in Detroit. The emphasis given to preparation and mailing of agenda, illustrated display and legal advertisements, and recording of Board decisions is especially noteworthy.



Each hearing must be advertised in a local daily paper.

cases the actions of the Board are considered final. However, a petitioner who has received an adverse decision from the Board has the right to appeal his case to the City Commission. Such appeal must be taken within 60 days after the action of the Board. It requires a four-fifths vote of the members of the City Commission to overrule an adverse recommendation of the Board.

After the Board meeting, resolutions of recommendation are transcribed by the recording secretary and put in proper form as quickly as possible so that certified copies can be given to the Board Attorney for preparation of necessary ordinances.

Complete minutes of all meetings are also transcribed and mimeographed and mailed to the City Manager, City Commissioners, Board members, department heads and others.

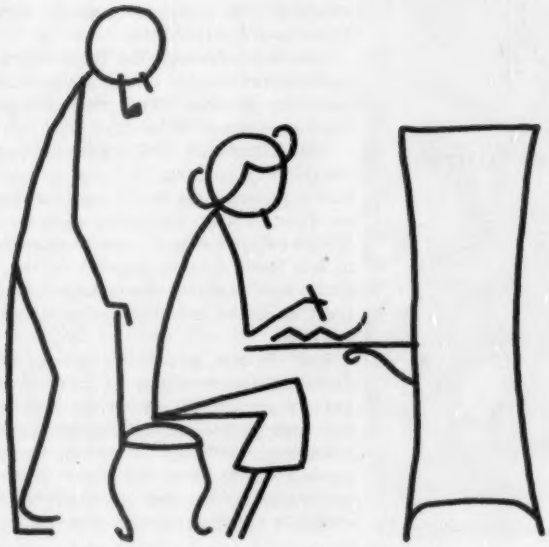
When recommended ordinances are ready to be placed on the City Commission calendar or appeals are scheduled to be heard, the Board staff notifies the principals and any objectors so that they may be given opportunity to again express their opinions direct to the Commission.

The Board's secretary sends letters of transmittal to the City Manager and City Commission with the copies of each ordinance, explaining the Board's action, and accompanies his letter with copies of the complete list of owners and map, each checked and colored in green and red to indicate approvals and objections. Other pertinent information such as photographs, building plans, etc., is included.

Ordinances Adopted After Two Separate Readings

Ordinances are ordinarily adopted by the City Commission after two readings on separate days. The first reading is by title and the second is in full. Such ordinances actually become effective 30 days after final adoption.

Ordinances may be adopted as emergency measures under certain conditions, with reading in full and by a vote of at least four-fifths of the members of the Commission. Such an ordinance goes into effect immediately after publication, within 10 days after adoption of the ordinance.



The Board's secretary sends letters of transmittal to City Manager and City Commission.

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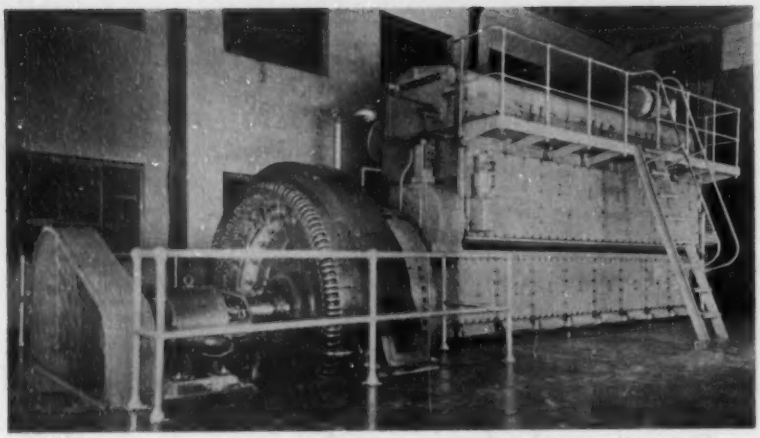


The dual-fuel engine showing the Elliott generator and the Woodward govenor.

Dual-Fuel Power Is The Choice

To supply more electric power Nebraska City had four alternatives— But only one of them Was a sound economic move

By VERN LIVINGSTON
Manager of Utilities
Nebraska City, Nebr.

SEVERAL ALTERNATIVE solutions were available when the need for increased electric power became apparent in Nebraska City, Nebr., a city of almost 7,000 in the southeastern corner of the state. The existing plant used steam to generate a maximum 2,500 kw. This supply was reinforced by a 2,000-kw connection to Consumers Public Power District through a 33-kv transmission line.

The steam plant consisted of three 500-hp boilers operating at 165 pounds of pressure: 1,250-kw, 750-kw, and 500-kw turbogenerators. The 500-kw unit had been retired before World War II, but was returned to service and is still in use.

When the peak load approached the combined capacity of all power sources, the city was compelled to make provisions for added power.

Four possibilities presented themselves:

1. Purchase all power from Consumers Public Power District
2. Purchase power from any other available source
3. Expand capacity of the steam plant
4. Install new diesel generating equipment

Alternatives Analyzed

The first possibility required the construction of a new 69-kw line to the city as well as three substations. The rate would remain unchanged and, in effect, would be that usually charged for wholesale energy supplied to municipalities.

The second possibility required renegotiation of the existing contract with the District. The present contract extends until 1965.

The expansion of the steam plant would require installation of a modern, high-pressure boiler and turbine in order to realize efficient operation. This new unit would have to operate at low loads or as a standby for several years because the existing contract specifies a minimum purchase amount.

The fourth possibility of using diesel equipment offered flexibility of generating units, plus efficiency at full and part load. Balancing these advantages offered by diesel units against those that the other possibilities presented, the city decided to continue operating the old steam

plant, purchase a minimum amount of supplementary power from the District, and install new dual-fuel diesel units as the load increased. This arrangement provided savings amounting to $38,000 per year or $4.75 per person per year.

New Site Selected

With the limited space available at the old steam plant and the ever-present danger of floods at the old site, the city decided to build at a nearby location on higher ground. The new generating plant is being built in three sections, each large enough to house two engine-generator units.

One wall of the plant is constructed of movable steel panels that will permit expansion at a minimum cost. The first section was started in 1951; and the first 1,500-kw unit was placed in operation in 1952. The second 1,500-kw unit will be in operation shortly. Both use 2,120-hp Nordberg Supairthermal Duafuel engines for the prime source of power.

In spite of the initial period of break-in and adjustment, the superior functioning of the new unit has been reflected in substantial cost reductions. For the first eight months of 1953, the fuel cost at the old plant averaged 4.682 mills per kwhr compared with 2.648 mills at the new plant. Total operating costs before depreciation were 7.53 mills per kwhr at the steam plant compared with 4.0 mills at the diesel plant. In the period considered, the Nordberg ran part of the time as a full, oil-burning diesel. Consequently, it is safe to predict that average costs in the future will be even lower than those cited.

Fuel Combinations

The engine is capable of operating on either natural gas or diesel fuel, or with any combination of the two fuels. Because of the comparative fuel costs, natural gas is used as much as possible. In the event of gas failure, the engine automatically switches to fuel-oil operation.

Natural gas is supplied to the engine at 28 pounds of pressure, measured by Metric Metal Works displacement-type meters. It is admitted on the suction stroke of the engine in amounts determined by the governor. A No. 2 diesel oil is delivered either by tank cars or truck to the plant and stored in underground tanks of 68,000-gallon capacity. Individual day tanks are located in the basement with the necessary transfer pumps and Nugent fuel filters.

Air for the engine passes through an oil-bath American Air Filter air cleaner and then proceeds to a supercharger driven by exhaust gas where it is compressed to 14 pounds of pressure.

The air then passes through an intercooler where its temperature is reduced before entering the engine cylinders. The intercooler allows the engine to maintain a maximum load even though the air temperatures are high in the summer months.

Cooling Tower Preferred

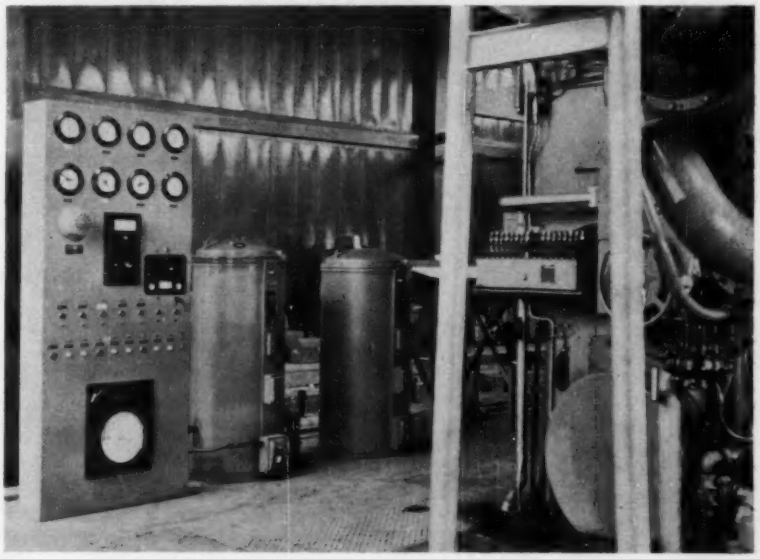
Despite the large quantities of river water available for cooling purposes, it was decided to install cooling towers. Treated engine jacket water is circulated through a closed cycle and is cooled by water from the tower. The cooling-tower water also circulates through a Graham intercooler and a Ross lube-oil cooler.

Automatic controls maintain the power quantity of oil flowing through the shell-and-tube type of heat exchangers to give the correct oil and engine temperature. The cooling make-up water is softened with a Dearborn sodium zeolite softener and supplemental chemical feed. The engine jacket water is also chemically treated to maintain low hardness and the proper pH. Two Pritchard single-cell, induced-draft, wooden cooling towers are currently in use.

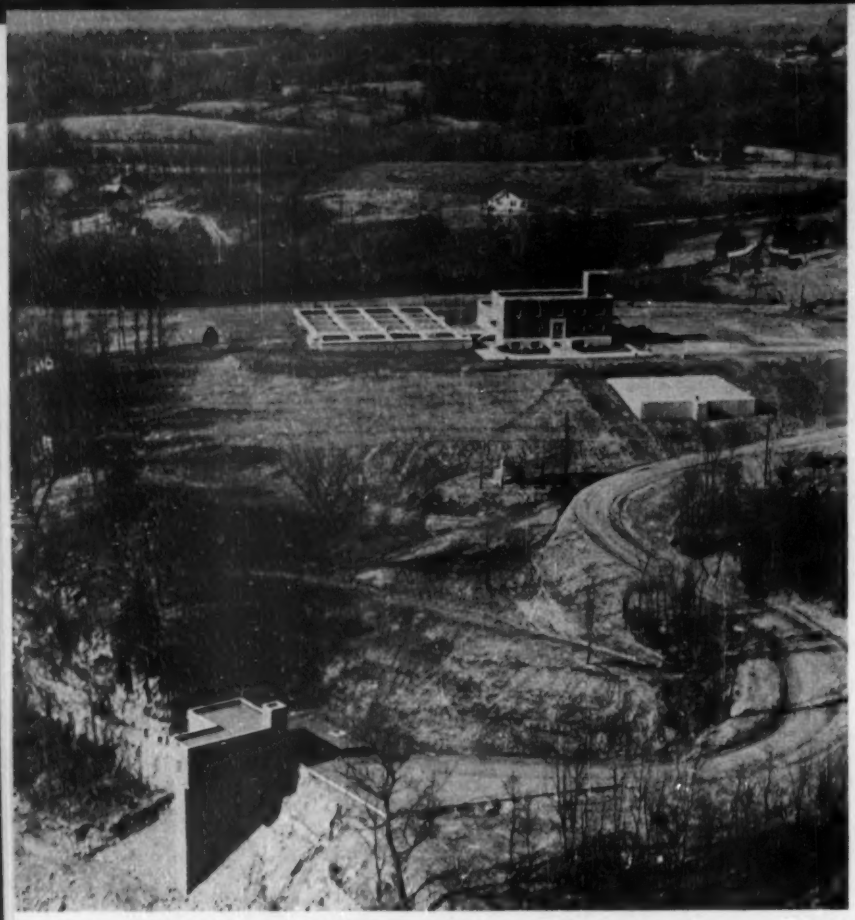
The City Benefits

The electric power from the generator is delivered through Westinghouse unitized, metal-clad switchgear to the existing distribution system. Plant auxiliaries and lights are handled by three 25-kva 2,400/120-240-volt transformers.

The addition has already had its effect on the economic life of the city. For several years prior to the expansion, no new industries were willing to locate here. The improved system has already attracted one major new industry and others are anticipated.



A Leary panel holds an Alnor pyrometer; alongside it is a Honan-Crane lube purifier.



The designers left sufficient space between the intake (foreground) and the filter plant (rear) so that the plant could be expanded to meet increased demand.

Water-Treatment Plants Need Room to Grow

Clarksville, Tenn., abandons an old plant on a crowded site and rebuilds at a new location

By G. R. WATKINS
J. Stephen Watkins
Consulting Engineers
Lexington, Ky.

CLARKSVILLE learned by experience the need for a proper site for its water-treatment plant. The old plant, while convenient to the city's distribution system, was in constant danger from flood waters. It could not readily be expanded because of its location; and it was downstream from the city and, therefore, had to contend with pollution from its own people.

These problems now belong to the past. The new plant is on a scenic spot upstream from the city, on ground high enough to be well beyond the highest recorded flood stage of the Cumberland River in northern Tennessee. Moreover, the area of land that it occupies will allow expansion of the plant should the city continue to grow at its present rate.

The city has been growing steadily, aided to an extent, by the location of a permanent army post nearby. The plant now serves a population of 20,000. In addition, it assumes responsibility for supplying water to about 2,500 people outside the city limits.

The new plant is designed to supply 4 mgd (million gallons daily) to the city. However, the intake and raw-water pumping facilities are large enough to cope with double this amount.

Four DeLaval horizontal centrifugal raw-water pumps rated at 2 mgd are located in a dry well that is below the normal pool stage of the river. The pumps bring the water to the plant. The dry well is approximately 80 feet deep and can be

The filter room also can be enlarged without difficulty should the need for added facilities arise.

reached by elevator; however, a ladder is provided for emergency access.

The intake proper consists of a 42-inch reinforced-concrete pipe, extending about 75 feet out into the river and terminating in a submerged reinforced-concrete intake structure. The intake is equipped with a Link-Belt traveling screen.

Settling Basin Design

The filter plant has been designed so that it can be expanded in 2-mgd increments when needed. It lies about 500 feet away from the raw-water pumping station. The raw water enters a quick-mix basin located inside the filter building proper.

The plant treats the water by the conventional coagulation and settling process, using rectangular settling tanks. The flocculation proceeds for 45 minutes under the design flow of 4 mgd.

Wood baffles are used to separate the flocculation from the settling tanks. An American Well Works induced-air type of rapid mixer blends the coagulating chemicals with the raw water.

The settling tanks have a theoretical detention period of four hours and were designed to provide an overflow rate of 520 gallons per day per square foot of tank surface. The rate over the effluent weirs in the settling tanks is approximately 13,000 gallons per day per linear foot of weir. The settling tanks are equipped with American Well Works straightline sludge-removal equipment.

The Clarksville plant is provided with Omega Gravimetric dry feeders for lime and alum. There are two lime feeders, one to feed lime for coagulation and one for the addition of lime to the finished water for pH control. Chemicals are stored on the second floor of the filter building and the chemical machines are charged from this point.

The filter building is equipped with a freight elevator for lifting the chemicals to the storage flow. Bagged chemicals are used. Space was also provided for the future installation of a feeder for the addition of fluoride to the water.

The filters were designed on the basis of 2 gallons per square foot per minute and are provided with filter sand that has an effective size of 0.45 to 0.55 mm. The filter underdrains, of the clay-tile type, are supplied by the F. B. Leopold Company of Pittsburgh. The filters use Simplex Valve and Meter gauges and controllers, including the raw-water and wash-water controllers. To keep the filter sand clean, the filters use Palmer rotating surface-wash equipment. Acipco cast-iron pipe was used in the filter gallery and in the pump-room piping.

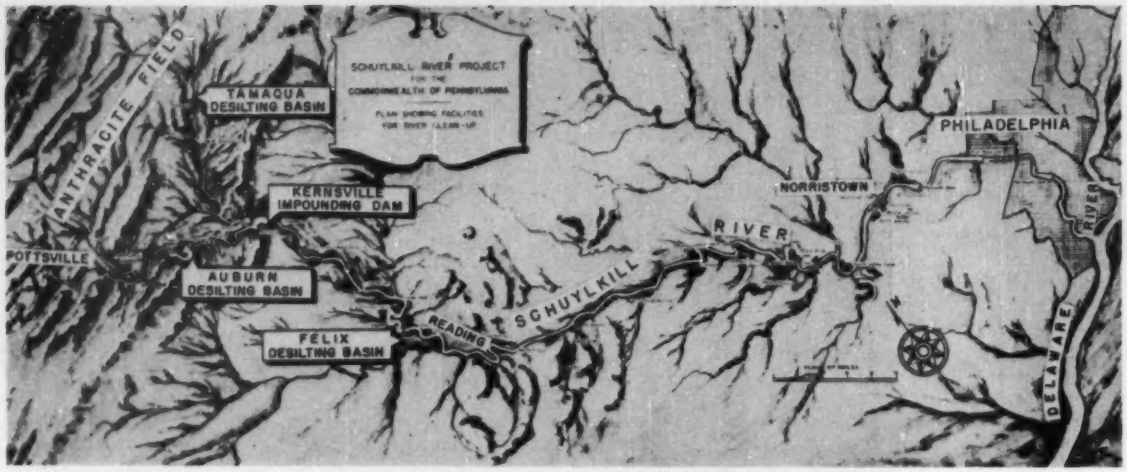
High Service Pumping

The high-service pumping equipment is located in the basement of the filter building and consists of four 2-mgd DeLaval horizontal-centrifugal pumps. These pumps take suction from a 500,000-gallon underground reinforced-concrete clear well that is located in front of the filter building. The wash-water pump is located in the basement of the filter building.

The distribution system also was enlarged. About 2.6 miles of 12- and 14-inch Acipco ball-and-spigot Enameline pipe was used to reinforce and expand the system; and 1.8 miles of 16-inch pipe were laid to connect the new plant with the distribution system. In addition, a loop of 12-inch pipe surrounded the entire distribution piping to eliminate dead ends. A new Chicago Bridge and Iron elevated steel tank of 500,000 gallons capacity was erected near the industrial district to reinforce the system at this important point.

One of the outstanding features of the treatment-plant design was the inclusion of a raw-water controller. This controller is located in the basement of the filter building on the raw-water line just before it enters the mixing basin. This device is remotely controlled from the master panel on the operating floor of the filter building. It permits the operator to synchronize the rate of delivery of raw water with the rate of filtration at any particular time and at any river stage.

For the design and supervision of construction, the city retained the service of J. Stephen Watkins, consulting engineers of Lexington, Ky. The author was in charge of construction; R. P. Johnson, of design. The work was completed during the administration of Mayor William Kleeman. John T. Cunningham III is water-works commissioner, and Walter Gray, water-plant superintendent.



From Pottsville all the way to Philadelphia, the Commonwealth is engaged in cleaning up Schuylkill River waters.

At Reading, Pa., the removal of culm from anthracite-mining operations required this heavy excavation equipment.

Besides the scenic benefits of restoring the river, there are improved quality of water and freedom from floods.

Pennsylvania Rescues a River

Benefits stack up as the Schuylkill River is gradually freed from the pollution that threatened its existence

By FREDERICK DECHANT, Executive Officer, Schuylkill River Project Engineers*

MANY RIVERS throughout the country are strangling the growth and health of municipalities. This condition need not be. The Schuylkill River Restoration testifies to what can be done when a state, its municipalities, and industries work in active harmony to insure a continued safe supply of water.

Headwaters of the Schuylkill rise in the southern anthracite coal fields, traverse a rich mineral area, break through the Blue Mountains at Port Clinton Gap, and enter an agricultural and industrial valley that extends to the Port of Philadelphia.

Coal Silt Piled Up

For many years, this watercourse received the drainage from anthracite coal operations, rock, silt, and culm. The river's flood plain became so elevated that coal silt had accumulated in 26-foot piles with a 3-foot normal water flow. Human life was threatened and annual flood damages totaled millions of dollars. Agriculture, industry, and property suffered after every freshet. Navigation was made impossible as early as 1917. The river had no recreational use and became seriously impaired as a source of domestic and industrial water. Untreated or partially treated sewage from municipal and industrial sources added to the contamination.

In June 1947, this trend was reversed when the Commonwealth of Pennsylvania undertook the restoration of the river, the first such project in our nation's history. The active support of municipalities and local chambers of commerce did much to facilitate the undertaking.

Since then, more than 18,000,000 cubic yards of coal silt and waste materials have been dredged from the stream bed and river, and were pumped to 22 silt-impounding basins. Here the silt was settled out of the water and the clarified effluent returned to the river.

Old dams that were obstacles to free flow of water were removed, permitting the natural transporting power of the river to carry wastes from upper regions to points lower down the river for removal. About 73 miles of river channel were rectified to improve the river's ability to pass flood waters.

At the same time, the Schuylkill River Desilting Program moved to eliminate mine wastes at the source. State antipollution laws were enforced to keep mine wastes from the river and its tributaries.

The river water now runs clear and is comparatively free from sediment. Industry is able to use it for all purposes below Reading, where flood heights have been reduced by 8 feet. Above this city, the water is clear but slightly acid. Discharge of mine wastes has dropped 99%. Substantial lowering of the flood plain has brought the river back to its original channel in a number of other key locations. The threat of flood and its havoc have been largely eliminated.

New Recreational Attractions

Municipalities have drastically cut maintenance costs of their water-treating systems since they no longer have to handle the great load of sediment. Recreational facilities are being established along the entire length of the river. Swimming is no longer endangered by contaminated water; and streams have been stocked with fish that thrive in the waters.

Coal Reclaimed from Basins

An interesting aspect of the development has been the recovery of marketable coals that were impounded in the basins. The Commonwealth of Pennsylvania now receives royalties of 31 cents per net ton of coal recovered from the basins.

This experience, and the benefits achieved, should provide an excellent case study showing what can be done to restore a river.

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* Mr. Dechant is chairman of the board of Frederic R. Harris, Inc., consulting engineers, of Philadelphia and New York.

Hays, Kans., Uses Photos For Fire-Prevention Publicity

A NOVEL FIRE-PREVENTION publicity stunt was recently tried by the Fire Prevention Committee of the Hays, Kans., Chamber of Commerce, which depended on the cooperation of elementary-school children. The committee distributed home-fire-hazard-study forms to school children of the first to fourth grades. About 60% of the youngsters completed the forms, took them to the fire station, and were posed with a fire engine for an individual, free photograph.

City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

Library with PR Know-How Proves "Thar's Gold in Them Thar Books!"

TO THE PEOPLE of Newark, N. J., the municipal library has told its story. In its report, "More Power," issued in July 1953, it says, among other things, that "nobody loves the library more than the businessman who has done some prospecting among its collections or merely put a question to it by telephone," thereby proving, "thar's gold in them thar books."

The Employees' View

Newark's library people think of the library as "a purveyor of energy," supplying power "so that citizens may have and hold ideas that will make tomorrow a richer day than yesterday." To supply that power, the library had to have adequate facilities and it had to let people know the power was available.

Newark's skill in doing both has resulted in a per capita book circulation of four per year . . . considerably higher than the average 2.85 per year in eight cities of comparable size over the country.

The loyalty of citizens to the Newark library is expressed in the report, "More Power," by a two-year-old library fan who says she prays regularly for the library and its story teller.

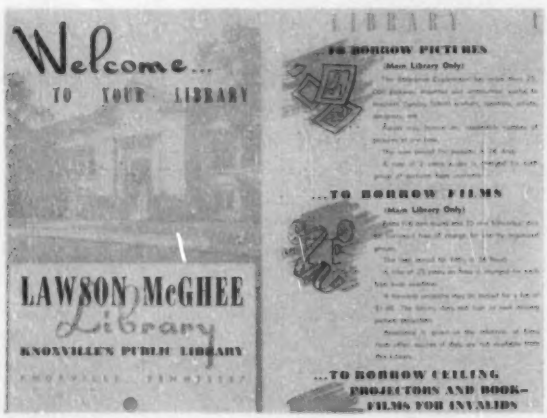
If, in Newark, the public library can supply citizens with power, keep businessmen prospecting it for answers, and elicit blessings from the very young, it is doing a public relations job not only for itself but for the city government of which it is a part. And this is what the Newark story points up for municipal authorities elsewhere: a good public library makes friends and influences people. The city official has a stake in seeing that library services are adequate, helping the library advertise its services, and claiming city-kin to it.

As is the case in all departments of the city government, good public relations start with good service. Newark's main library was remodeled last year at a cost of $1,500,000 to provide better lighting, more reading room, special facilities to listen to the music library records, adequate display space for browsing through the collection of prints and other art works which patrons may borrow.

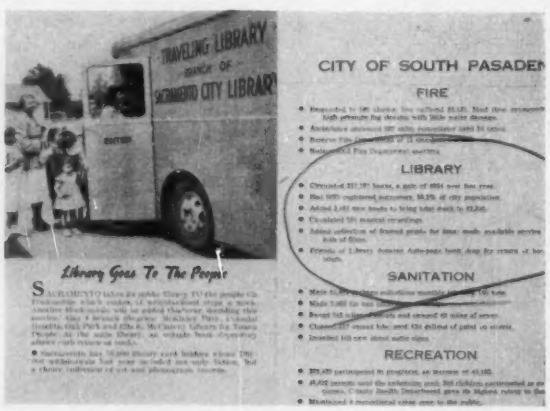
Childhood Marriages

Newark spends $2.97 per capita for its library—well above the expenditure in many cities but below the $3.57 which the American Library Association says is the minimum needed for "superior service."

Relating itself with the public goes hand in hand with providing service in Newark. "Childhood marriages are frowned upon," the Newark library



A two-color library brochure invites citizens to use services of the Knoxville, Tenn., library and tells them how its done.



Two California cities, Sacramento and South Pasadena, give bookmobile and auto-page services, respectively, to patrons.

admits, "but we believe in one exception. The best time to form a lifelong union between brain and book is in childhood." The Newark library plays the role of "matchmaker" and "employs man stratagems." Story hours, indoors and outdoors, are held for pre-school children. A Children's Book Fair focused attention on the library for a whole week during which an author, a TV entertainer, and a New York Yankee baseball star were on hand to entertain the 13,000 persons who attended the fair.

Business Sheet Published

The Newark library loans 1,000 books to each of the 50 elementary schools and 10 high schools in the city, so school children become familiar with the library's loan seal at their schools and then visit the nearest branch library for materials the school does not provide. A teen-age consultant, a member of the library staff, visits graduating classes and high-school groups to tell students how the library can make life more interesting for young adults.

The library publishes a monthly sheet for businessmen, called: "Business Literature," to help readers get the best from the library. And the businessmen of Newark are the largest group users of the reference library. Housewives, mothers—yes, and city officials, also turn to the reference telephone for answers to their questions.

Other PR Measures

In addition to the monthly business listing and the report, "More Power," the Newark library receives regular attention in the local newspapers, and from Newark broadcasters. Its staff is urged to participate in as many outside community activities as possible. So they take the library story to business luncheons, garden-club meetings, and church suppers.

There are other cities which, like Newark, have demonstrated creative skill in providing service and advertising it—to advantage of both library and city government in general. Knoxville's Lawson-McGhee Public Library sponsors book-review luncheons monthly at a popular cafeteria which attracts hundreds of businessmen and shoppers at the noon hour.

This library has an agreement with a local cab company to pick up a book in any part of town and return it to the library with the borrower paying a minimum fee. And the Knoxville library is now planning a TV campaign which involves the showing of the cover of an available library book on the subject of every locally produced program on the station.

Bookmobiles Attract New Readers

Bookmobiles in many cities have taken the library to the neighborhood and attracted thousands who have never before enjoyed library services. Records and art libraries are winning friends from Milwaukee to New Orleans. Film libraries and projectors are loaned to club groups and for showings at hospitals. Returning books is being made easy in many cities where the library provides curb receptacles for motorists who simply drive by, drop in their books at any hour.

Milwaukee's library is the meeting place for groups interested in citizenship education and features exhibits on this subject. A Memphis citizen's group holds monthly forums on city government at the library. Newark's library organized Great Books Discussion groups which developed hundreds of new library users. In New York City, branch libraries are trying out "family nights," to which the entire family is invited. Once at the library the family is divided into age groups and each is suitably entertained. This eliminates a "baby-sitter" problem and rivals TV for "whole-family" attention.

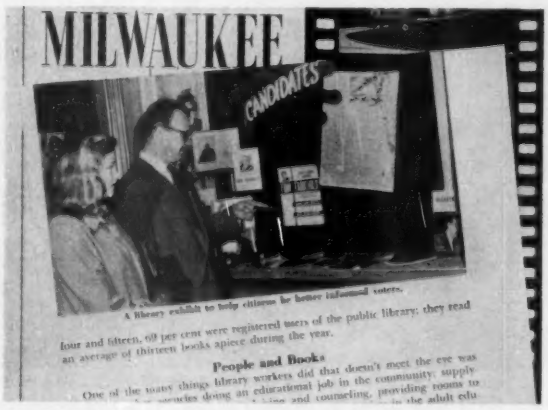
Work for City PR Official

Assuming that library facilities in your city are adequate, the library is making friends of the people it serves. City officials with the public relations function should help it make more friends.

Here are the ways in which some city halls are spotlighting their library: Library is featured in quarterly reports to the people. City Hall PR man provides a weekly list of new books and a review for newspaper in a small city. Brochure on library service is published and distributed through clubs, schools, and neighborhood theaters. The library is featured on city TV and radio shows. City employees hold PR Training Course at the city library.

A plan for doing a creative job in library work is basic, says the PR Committee of the Special Libraries Association, and, equally important, is telling people about it. This group has developed a visual presentation, "Our Library," to help cities tell their story of library service to the people.*

* Write Special Libraries Association, 31 E. 10th St., New York 3, N. Y. For information about the Government Public Relations Association, write to 1313 E. 60th St., Chicago, Ill., or to the Director, Box 8260, Knoxville, Tenn.


MILWAUKEE
CANDIDATES
A library exhibit to help citizens be better informed voters.
four and fifteen. 69 per cent were registered users of the public library; they read
an average of thirteen books apiece during the year.
People and Books

Special exhibits, counseling, radio and TV shows on composers, authors, and artists, are among Milwaukee library services.

CULTURAL
PROGRESS
In addition to building physically for the future, your city government this year began efforts to preserve and maintain the cultural and historical values of New Orleans. One high priority project is the Public Library system.
Last year 42 per cent more patrons registered for book cards than the year before. Circulation, above the one million mark for the third straight year, topped all previous records. Busy Information Desk answered 3,000 inquiries. Over 12,300 members of summer reading
pressing demands being
fast-growing city, the
making plans for three
Architect's plans for
which are already under-
New Orleans
NORMAN MAYER branch library serves Gentilly residents.
RECORD LENDING department of Milton H. Latter Memorial library is popular.

New branch buildings increase the number of library users and make good relations with the public in New Orleans, La.

The front view of the Jefferson Davis Parish Health Center, at Jennings, La.

A Health Building for a Small Community

Jennings, La., gets one of 37 new health centers in Louisiana

By BILL SMOLKIN
Scott Wilson & Associates
New Orleans, La.

IN THE BRIGHT, cheery waiting room of the new building, with its modern glass wall overlooking a green lawn, the civic club members listened intently as a health educator told how the community could protect itself against epidemics.

Elsewhere in the building, four expectant mothers were learning how to bathe an infant; a nurse was drafting an investigative report on a case of typhus; a sanitarian was packing milk samples for delivery to the nearby regional laboratory; a technician was X-raying suspected TB victims; and a clerk was filing birth certificates of school children.

Altogether, it was a busy day at the Jefferson Davis Parish* Health Center in Jennings, La., one of 37 new centers throughout the state either completed, under construction, or programmed in a combined federal-state-local program under the Hill-Burton Act. The health centers are replacing crowded, ill-equipped offices in basements, converted houses, and other improvised quarters.

The center at Jennings, neither the largest nor the smallest of the new buildings, is representative of 24 thus far completed. Previously the parish health unit occupied two rooms of a residence owned by the parish police jury, the parish governing body.

When the state legislature appropriated $600,000 in matching funds for health-center construction under the Hill-Burton Act, the police jury made prompt application. The $53,080 project was approved under the following arrangement: The police jury would provide a site valued at $7,000, plus $3,616 from its general fund surplus; the state would contribute approximately $7,962, and the federal government would provide $34,502.

Ricciuti, Stoffle & Associates, New

PHOTOS ON THIS PAGE COURTESY OF RICCIUTI, STOFFLE & ASSOCIATES

The waiting room at the new health center in Jennings is divided in two by planter and literature racks which are on wheels. For community gatherings, the racks are pushed aside to make one large room. The reception desk is at the right.

* As most readers of THE AMERICAN CITY are aware, a parish in Louisiana corresponds to a county in other states.

Orleans architects and engineers, who also designed five other health centers in various parts of the state, planned the Jefferson Davis Parish facility along simple, functional lines.

The building is on a slab foundation, with masonry walls and wooden framing. Its flat roof has 4-foot overhangs, which shelter continuous strip awning-type windows. Economical wing walls support the overhang at key points and are a distinctive design feature.

Design for Service

A primary consideration in the floor plan was to provide easy front-to-rear traffic flow, so that mass inoculations could be handled with ease should the need arise. Another aspect of the plan is multiple use of certain areas.

The waiting room, for example, is divided in two by a large planter and a literature holder, both of which are on wheels. For lectures or community gatherings, the dividers can easily be rolled to one side.

The secretarial office has a receptionist desk which controls both the waiting room and the corridor. It also houses health records and office correspondence. Without entering the corridor for public traffic, the secretary may go to the storeroom or to the nurses' office. The director's office, used less frequently, is across the hall.

Quarters for Nurses

The nurses' office is placed centrally for convenience to other activities. As noted, it is near the record section, but it is also directly across from the maternal- and child-health area. This section contains a room for demonstrations to small groups, and has an adjoining consultation room. Beyond it is a utility room, containing sterilization equipment.

The quarters of the sanitarians, whose activities require them to go in and out of the building with paraphernalia many times a day, have been placed near the rear entrance. Their office is adjoined by a laboratory and storage area.

Also near the rear entrance is a room containing X-ray equipment, which may be used for anti-TB and anti-VD functions, and may also be darkened for showing of slides and movies to small groups.

The staff consists of two nurses, a nurses' aid, two sanitarians, and a clerk, under supervision of a district director who is responsible for several parishes. The present annual budget is approximately $22,000, covered by $5,000 from the parish police jury; $5,000 from the parish school board; $1,000 from the City of Jennings, and $11,000 from state-federal funds.

Sanitarian A. R. Constant checks a water sample at the health center.

Among the many activities that either take place in or originate from the center are:

- Keeping of vital statistics and health records, which provide the factual basis for tailoring public-health efforts to the needs of the parish.
- Public sanitation, including the testing of water and milk supplies; the inspection of eating places, schools, and other public places; assistance to cities in sewerage and garbage disposal problems; rodent- and insect-extermination programs, etc.
- Communicable disease control, including immunization, investigation, quarantine, and related activities.
- Maternal and child health, including instruction of midwives and expectant mothers, well-baby clinics, pre-school and school health programs, and crippled children's services.
- Laboratory services for testing of blood, milk, water, and other substances in conjunction with a regional laboratory at nearby Lake Charles, La.
- Public health education, through distribution of literature, posters, lectures, motion pictures, press releases and other media.

All these activities, once crowded into two rooms, are now conducted in cheerful, comfortable surroundings, typical of the 37 new health centers that are, in the words of an official report, adding "prestige, dignity, and service" to the public-health program in Louisiana.

Albany, N. Y., Limits Sidewalk Claim Problem

AN ATTEMPT TO AVOID suits against the city for injuries suffered in sidewalk accidents has been made by Albany, N. Y. Mayor Erastus Corning signed a local law in December 1953 that amended section 244 of the Second Class Cities Law of New York State, so far as it relates to the City of Albany.

Hereafter the city must have written notice of a defective sidewalk before a person can legally bring action against the city for injuries suffered as a result of the defect.

This is the first attempt to amend section 244 since the Appellate Division declared a similar Schenectady local law invalid more than 15 years ago, reports the New York State Conference of Mayors. It is now the belief of the City of Albany that this local law is valid in the light of more recent court decisions.

The local law may well set an example for other Second Class Cities in New York State, as it is expected to save Albany taxpayers thousands of dollars a year through greatly limiting the problems arising from sidewalk claims.

Achievements that brought recognition to the eleven

Runners-up in the 1953 "All-America" Cities Contest

AS PREVIOUSLY reported in this magazine, 22 cities submitted at the annual conference of the National Municipal League their claims for a place on the "All-America Cities" team of 1953. Statements of achievements from the 11 winners were published last month.

THE AMERICAN CITY is now glad to present similar statements from the 11 other cities to which the jury of awards accorded honorable mention. As was the case last month, the statements are presented in alphabetical order.

This annual "All-America Cities" contest, co-sponsored by the National Municipal League and *Look* magazine, is intended to stimulate cooperation between forward-looking city officials and energetic, purposeful, intelligent citizen effort for noteworthy progress in municipal betterment.

Corpus Christi, Texas

THE Better Government League of Corpus Christi carries on a continuous program calculated to maintain the interest of citizens in local agencies of government. Monthly meetings are held of the League's membership. Each program is given by a member of the League, and is based on exhaustive research into the operations of some local government unit.

These talks are always publicized in the daily papers. Each program is broadcast over a local radio station. The League publishes a monthly bulletin.

The League's philosophy is that people will be interested in their government if they are informed. And that if they are interested they will do whatever needs to be done to have good government.

Last year the League waged a campaign for an election to recall the incumbent City Council after the mayor, a councilman, the city manager, and several others were indicted by a grand jury that had investigated the city government. Both petitions for recall elections were denied. The League went to court with its second petition and was granted an order of mandamus against the city administration. This order was upheld by the Court of Civil Appeals when the administration appealed, but so much time had been lost in delay and legal technicalities that the matter became moot.

The League decided to carry its fight into the regular city election, which was held in April 1953. Sponsoring five outstanding business and professional men as candidates for the city council the League won a decisive two-to-one majority over a slate of candidates backed by the old administration.

DEWITT MORGAN

Fair Lawn, New Jersey

SPARKED by imaginative community leaders, Fair Lawn residents have a record of accomplishment of which they can be proud. A look at Uncle Sam's census figures shows that in 1930 a sleepy Fair Lawn consisted of 5,900 souls. By 1940 it was 9,017; in 1950 the population curve had climbed to 23,865; and the 1954 estimate (based on building starts) stands around 32,000. And it is still going strong.

F. H. A. requirements for new homes took care of roads, sidewalks, and affiliated problems; but what about schools? The number one problem was that of providing adequate school facilities to keep up with the rapid rate of growth. This was one for the town to cope with. The people set about to find a way to build schools and more schools.

With the help of citizens interested in schooling the kids, a Citizens School Committee got going on an educational program for the taxpayers. Suffice it to say that with a lot of hard work, sweat, and tears, (when the junior high school referendum failed by a slim margin) additions to the Warren Point School and the Roosevelt School went through. The beautiful Henry B. Milnes School was built; Thomas Jefferson Junior High School saw the light of day, and the 13-room Lyncrest School on Morlot Avenue opened its doors.

Not content to rest on their laurels, the Committee is at work right now on a program for a second junior high and an addition to the senior high. The motto is "Don't Be a Part Time Parent." Chances of success are good.

On the municipal side of the picture a referendum to change from the old council-mayor form of government to the council-manager system was carried by

a small margin. Those on the council who fought for the change lost out in a close race which saw only one out of five council-manager advocates returned to the council. Subsequently, however, council-manager advocates gained control of the borough council and now hold four out of five seats, including the mayor's chair. The new administration turned to with a vigor and purpose and things began to happen.

A full-time borough engineer was installed, replacing the old fee-engineer system which often proves more costly. In the legal department the fee-borough-attorney practice was tossed out of the window to be replaced with a flat legal-fee basis. The borough now gets the services of two attorneys for a flat fee of $5,000. One man receives $4,000 and for that sum handles all legal matters, plus court appearances in local and state superior courts together with ordinances and resolutions, etc.

The assistant borough attorney works with the Zoning Board of Adjustment and Planning Board, appearing at all work sessions and public meetings. Recently completed under the assistant borough attorney's aegis was a complete zoning map and ordinance.

The present council has set in motion the development of a light industry zone, called Fair Lawn Industrial Park. Developed by a private operator, this area covers almost 200 acres and will, when completed, bring in about $300,000 in tax ratables. In addition to added ratables and rounding out the community on a sensible planning basis the light industry will cut down the area for home building, thereby lightening the load on local schools.

Water Expansion and Recreation Programs

Following up on this the Council has already started a water-expansion program, with two new wells planned for 1954 plus water main integration for more efficient distribution. Turning to the office affairs of the borough, the Council recently made headlines with the installation of a machine-accounting system especially designed for Fair Lawn's needs. Over-all cost will run between $25,000 and $30,000 and the resultant saving will be about $5,000. The saving is "in-pocket" since the town formerly handled its tax bills and water bills through an outside accounting-machine service. The new system makes for more efficient handling of tax-collecting at the window.

Not to be overlooked in any appraisal of Fair Lawn is its recreation program. The 1953 budget provided for about $59,000 with a full-time recreation superintendent. Citizens could avail themselves of almost any activity from bowling, camera club, choral groups, art classes, to swimming and countless other recreational activities.

Memorial Park—which some day, it is hoped, will be the most beautiful park and pool in the state—was built through the efforts of a citizens' group with voluntary contributions and integrated with the recreation department setup. Only a basic swimming area now and the bare outline of a park, future plans call for steady development over a long-range period.

The Little Leaguers ply their sports activities in the park now and a summer day sees many hundreds of Fair Lawn residents lolling on the white sands of Memorial Park.

All of this adds up to a very busy community with lots of civic pride and the energy and know-how to transform their community into an outstanding town in which to live, work, and bring up their children.

FRANK SOGORKA

Glendale, California

GLENDALE submitted its entry into the "All-America Cities" contest based upon a diversity of citizen-supported projects. These were designed to bring about community betterments in the areas of patriotism, religion, education, government, planning, and safety. Although the relationship of some of these areas to local government might be challenged, we feel that each builds better citizenship and, therefore, contributes directly toward better government.

The patriotism project resulted in the placing of 6,400 American flags in Glendale homes and the display of over 10,000 on recent holidays.

In the area of religion, the American Legion's nationwide "Back-to-God" Crusade was implemented locally by numerous free showings of "The Pilgrimage Play." The showings, plus the special religious window displays, 250 posters, 15 large outdoor billboards, and 25,000 lithographed heralds, kept the Back to God Crusade in the minds of Glendale citizens for a considerable period of time.

Large School Bond Issue Authorized

In the education field, authorization of $10,250,000 in school bonds was accomplished by the PTA Council of 2,500 parents, assisted by numerous civic groups. Widespread publicity, coupled with personal contacts and speeches, brought the needs of the schools to the voters, and the voters to the polls.

Glendale, back in 1914, had become the sixth city in the United States and the first in California to adopt and retain the council-manager form of government. This old charter was in need of revision. Arguments for and against proposed charter amendments and two special proposals were submitted by citizen groups. These arguments were printed in booklet form by the city and distributed to every registered voter. Four important charter amendments were approved. The vote on the two proposals, which was almost three to one against, gave the Council definite knowledge of the citizenry's viewpoint on these questions.

The fifth project had to do with off-street parking. A citizens' committee was formed to represent the membership of local organizations. This has resulted in a unified approach and viewpoint, because the committee members are instructed to present the views of their organizations.

The safety project was tied in with the nationwide "Operation Safety." Civic clubs assumed sponsorship for each month of one year with resulting competition, which has produced amazing results.

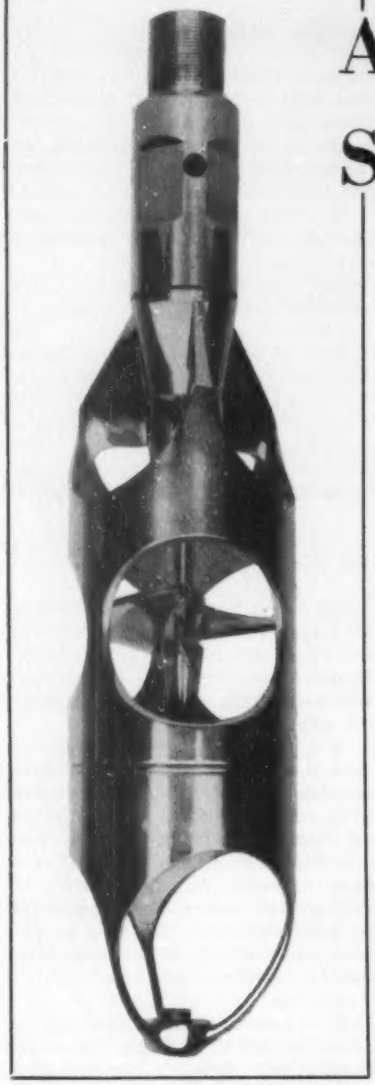
A feature of all the Glendale projects has been the unified and cooperative citizen approach in the matter of making an already good community still better.

C. E. PERKINS
City Manager

Grand Rapids, Mich.

GRAND RAPIDS' claim for recognition in the "All-America Cities" contest is based on nearly four years of municipal betterment under the reform administration of Mayor Paul G. Goebel—an administration whose election to office and subsequent activities have had the backing of alert, public-spirited citizens, one of whom

(*Continued on page* 153)



A spinner detects fluid movement within the well bore and can be used for permeability surveys, or to detect zones of fluid entry.

A Well Shoots the Works

Crystal Lake, Ill., rejuvenates an old well to boost yield 550%

By M. P. SCHNELLER, J. B. MILLIS, and J. T. BROWNING *

A YEAR AGO, Crystal Lake, a city of 5,000 in northeastern Illinois, could get only 80 gallons of water per minute from its Franklin Street well, with 109 feet of drawdown. Today, this well produces 520 gpm (gallons per minute), with the same drawdown. This increase of 550% in water production represents the work of an unusual rejuvenation program that required exploratory surveys, jet perforation, and acidizing.

Because available formation records of the well were incomplete, the first step in the workover program, after removing the pump from the well, was to run a caliper survey to determine the condition of the well bore. The caliper device has three retractable "feeler" arms that accurately gauge the diameter of the well bore. As it traverses the well, electrical impulses transmit information to the surface, where an automatic recorder graphically plots width against depth. The instrument is so sensitive that it easily detects the location of collars in the pipe.

The next step in the procedure was to make a permeability study, using the spinner instrument, which is a subsurface, flow-rate indicator that consists of a small propeller mounted in a guard cage. Fluid passing through the cage causes the blades to turn at varying speeds that are proportional to the rate of flow through the instrument. The revolutions of the blades are counted electrically. A surface instrument on the panel of the pilot-shooting unit registers the revolutions of the blades.

By traversing the well with the spinner, while water was injected into the well at a fixed rate, it was possible to measure variations in fluid velocity at different depths in the well. This information is converted into terms of water flow, percent of injection capacity or gpm input, and indicates the relative permeability of the different sections.

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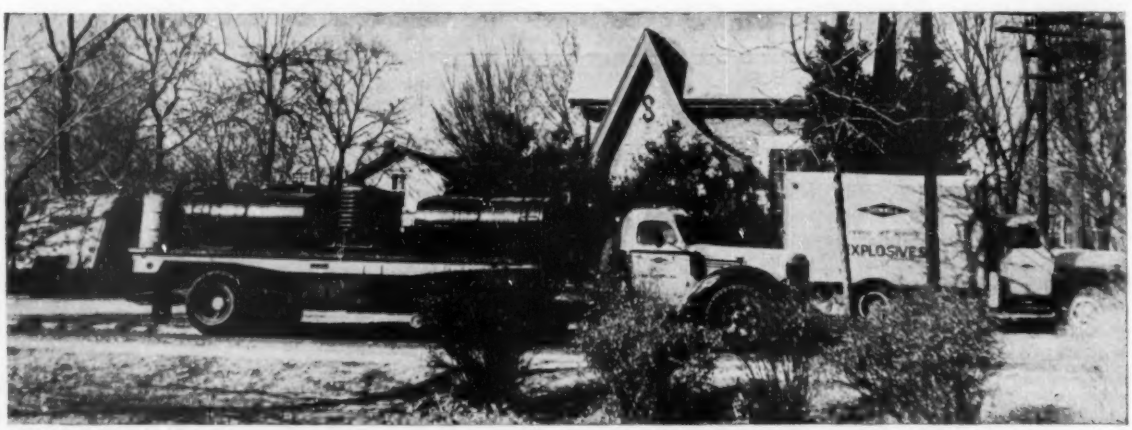
* Mr. Schneller heads the firm of M. P. Schneller and Associates, well contractors of Aurora, Ill. Mr. Millis is an engineer with the Illinois State Water Survey. Mr. Browning is area engineer of Dowell, Incorporated, of Chicago, Ill.



Mobile service equipment pictured above was used to increase the speed and efficiency of the rejuvenation program.

The data also identify "tight" and "open" zones and offer guides to the probable sources of good water production.

The spinner can also be used to measure the productivity of selected well sections. To do this, it is necessary to devise a method of producing a small quantity of water from the static level region, in order that the incoming water at the selected section will activate the spinner.

Perforation of Old Well

Upon completing the preliminary survey work, the data obtained were studied to ascertain which well sections were to be shot. The permeability survey indicated that the lower 200 feet of the well were relatively unproductive. Correlating this information with other formation data, the zone which lay from 1,088 to 1,300 feet below the surface appeared to be most potentially productive. This region is in the Galesville sandstone formation in the Cambrian system.

The shooting operation which followed was conducted by a Perfojet glass gun. The gun contains glass-encased charges that produce high-velocity jets of explosive gas, instead of bullets, which penetrate the formation. The charge is a shaped block of high explosive, similar to those used so effectively during the war in the Bazooka weapon for penetrating heavy tank armor. This charge contains a copper-lined, cone-shaped indentation at one end. When the explosive is detonated, the shock wave hits the apex of the cone and collapses it, creating a jet of gas and minute metal particles from the liner. Because the jet travels about 25,000 feet per second, the force of impact is tremendous. This high-velocity jet will penetrate the formation to an estimated depth of 18 to 21 inches.

An expendable carrier, constructed of aluminum tubing, holds the fluid-tight glass containers with their explosive charges. The charges are placed in the carrier according to the spacing pattern desired, and are held securely in place by thin steel bands. Each supporting tube contains a detonating string explosive known as a primacord. Triangular aluminum guides control the gun diameter, provide strength and rigidity, and protect the glass cases while the gun is being run into the well. The charges are fired electrically from the surface, forming holes deep within the formation. At the same time, the glass containers and aluminum carrier disintegrate by the explosion, leaving only minute particles in the well.

For Crystal Lake well, the charges were placed in the carrier at 6-inch intervals. Each charge was directed toward the face of the formation at an angle of 120° from the adjacent charges. Some 300 charges, 5 ounces each, were detonated. In a seven-hour shooting operation, a total of 150 linear feet of Galesville sandstone formation was shot.

The next step in the program was to prepare for acidizing which entailed the installation of 1,200 feet of 2-inch pipe through which the acid solution would be introduced. This method of treatment provided a natural water seal, approximately 925 feet above the end of the tubing.

In acidizing the well, a comparatively high rate of injection was used; 3,000 gallons of inhibited hydrochloric acid solution was introduced into the well at a rate of approximately 170 gpm. This rate gave the solution sufficient drive to penetrate the formation. An inspection of the tubing, following its removal from the well, indicated the acid level reached 175 feet above the point of introduction. Therefore, it was assumed that the formation had been acidized from the 1,025-foot level downward.

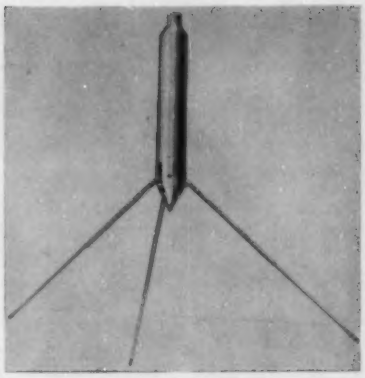
The acid solution used contained a nontoxic inhibitor and stabilizing agent. The inhibitor was used to protect the pump and other metal well equipment from acid attack. The stabilizing agent was used in order to keep the dissolved material in solution, and prevent any possible re-precipitation and plugging.

Re-installation of Pump

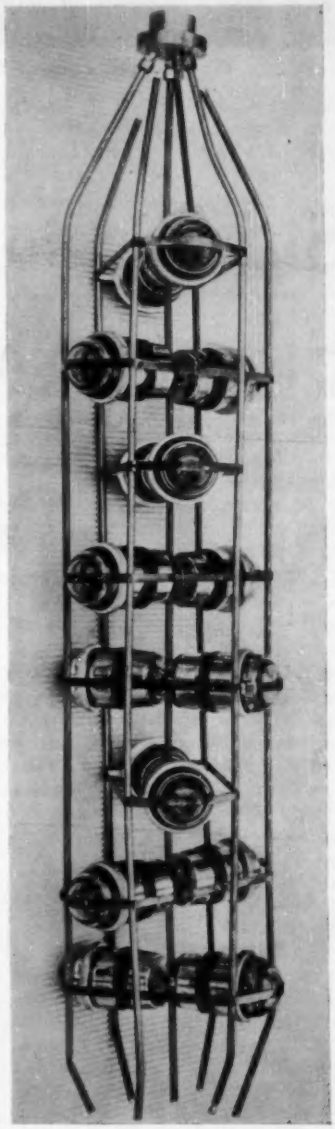
Following the acidizing operation, the pump was re-installed in the well. The same pump setting was used as that which had been in service before the start of the program. The pump bowls were set at 420 feet below the surface. The discharge line was directed to waste for the duration of the purging and test period.

The measuring device used consisted of a 6-inch orifice tube fitted with a 4-inch plate. This equipment was calibrated by the engineering department of Purdue University. Pressure gauges were employed to check the back pressure on the flow line, as well as to check the degree of drawdown during the pumping period. Tests were under the supervision of J. B. Millis, engineer for the State Water Survey.

Before the rejuvenation program, this well produced 80 gpm, with a maximum drawdown. After the rejuvenation work had been completed it produced 520 gpm, with a 109-foot drawdown.



A subsurface instrument measures the diameter of the well at the desired depth.



The glass gun can be tailored to fit any desired shooting pattern, or for specific well diameters up to 3 feet.

The power patrol mixes a 2-inch bituminous stabilized base.

Subdivision Street Problems

By EGIL WEFALD
Village Engineer
Richfield, Minn.

UNTIL 1950, Richfield was a quiet suburb of Minneapolis with a population of about 17,500, and I was city engineer of Fergus Falls, Minn. Today, Richfield is Minnesota's fastest growing municipality; its population already exceeds 28,000. I am starting my fourth year as village engineer and, during this time, have acquired a liberal education in municipal engineering under a special kind of inflation.

The 60% rise in population happened in such a startlingly short time that the village had great difficulty adjusting to the rapid growth. Houses went up more quickly than the streets could be built for them. The new homeowners, of course, did not like this situation. During the first summer that I was here, I spent a substantial portion of my time on the telephone answering people that their streets were really on the way.

In new subdivisions, the developer must grade the streets and pay for street surfacing. The village then surfaces the streets to its standards with its own forces. In addition, older streets need attention usually, and during this period of growth we simply could not cope with all the work contemplated.

Consequently, the village council adopted a logical course of action and asked for bids from contractors; but the bids required more money than was available. The village had agreed to surface the streets for 35 cents per square yard and the contracts called for 42 cents. Neither the developers nor the property owners were willing to make up the difference.

In the fall of 1951, the people of Richfield voted to approve a bond issue that would establish a public improvement revolving fund in order to implement a program of village-wide street improvements. This program anticipated oiling of the existing streets, and the council interpreted the bond-issue vote as an endorsement of an oiling program on the streets in the new developments, also.

However, residents of the new subdivisions had been promised 1½ inches of bituminous surfacing and, therefore, the oiling of streets was neither acceptable to them nor to the Federal Housing Authority that had guaranteed most of the mortgages.

In-Place Mixing

We, therefore, proposed that the developers arrange with bituminous road contractors to surface the streets. We recommended using the existing sandy material in the street which would be mixed with a slow-curing liquid asphalt to a depth of 2 inches. We also proposed that a bituminous curb of the same material be constructed.

This proposal was acceptable to all parties, so the developers began construction in the spring of 1952. One contractor did the work for several developers at the agreed unit price of 35 cents per square yard.

The contractor used a Barber-Greene traveling plant to mix the windrowed sand and asphalt. The first operation was to sacrify sufficient material to the base and curb, then windrow it, and finally process it. The contractor discovered that he could do a much better job if the curbs were laid out first and the surface last.

A total of 120,000 square yards of streets was surfaced in this manner. These streets have passed through two summers with little or no damage or deterioration. A few holes developed and some corrugations appeared where the mixture had been a little rich but, by and large, this construction has been very successful.

Village Program

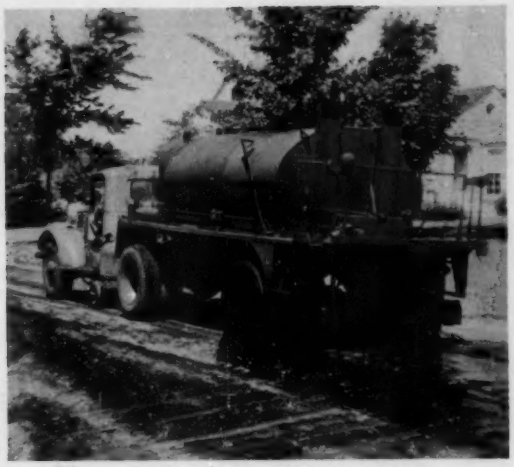
The village-wide oiling program started late in the spring of 1952. This job involved the application of SC-2, a slow-curing asphalt, at the rate of 0.3 of a gallon per square yard. A Rosco asphalt distributor with an Erickson circulating spray bar was used. A total of 935,000 square yards was surfaced in this manner at a total cost of approximately $29,000. The unit cost of this work was about 3.1 cents per square yard.

The asphalt penetrated the sandy

surface to a depth of about ¼ inch. Village forces did the work, using a Cleaver-Brooks two-car heater to maintain the proper temperature of the asphalt. Truck transports delivered the asphalt to the village where it was stored in a 14,000-gallon tank.

Construction Methods

The village forces also laid some streets using the same methods of construction as in the new developments. Asphalt was applied at the rate of 1.6 gallons per square yard to windrowed material so that a 2-inch surface and curb could be laid. Two Caterpillar and one Galion motor graders spread the windrowed material and a Welco 13-wheeled, rubber-tired roller compacted it. A total of 127,000 square yards was surfaced at a unit cost of approximately 21 cents per square yard.



Village-owned distributor applies asphalt surfacing.

Awarding of Contracts

This year, the village awarded contracts for street work requiring a 2-inch bituminous, stabilized base with curb and gutter and a 1½-inch road-mixed bituminous surface. A contract was awarded for 257,000 square yards of 2-inch stabilized base which cost approximately 20 cents per square yard, of which 186,000 square yards have been completed. Two contracts were awarded for 1½-inch road-mixed bituminous surface at a cost of 29.5 cents per square yard and for 63,000 yards at a cost of 24 cents per square yard, as well as for various other work. In all, during the summer of 1953, we placed 1,263,000 square yards of street surfacing, of which 775,000 yards was re-treatment.

This type of work has proved very successful and certainly has helped to improve street conditions in Richfield. Previous to the completion of the work, it was trying to live here on windy days. At times, the dust was terrific.

The work done under the village-wide oiling program is assessed on a village-wide basis. For the 1952 program, the special assessment was 7 cents per front foot, which amounted to $3.50 for a 50-foot lot and $5.25 for a 75-foot lot.

The village, until this year, did not have any sanitary sewers or public water system. Each resident maintains a private well and sewage-disposal system which is usually a septic tank or cesspool. However, early last year, contracts were awarded for a complete sanitary sewer interceptor system. This system will discharge into the Minneapolis-St. Paul Metropolitan sewage-disposal plant.

West of Richfield is the Village of Edina which is also experiencing unprecedented expansion. Edina, too, is connecting with the Minneapolis system by a sewer that passes through Richfield. Therefore, the two villages have worked out a joint agreement to construct a sewer that would serve both.

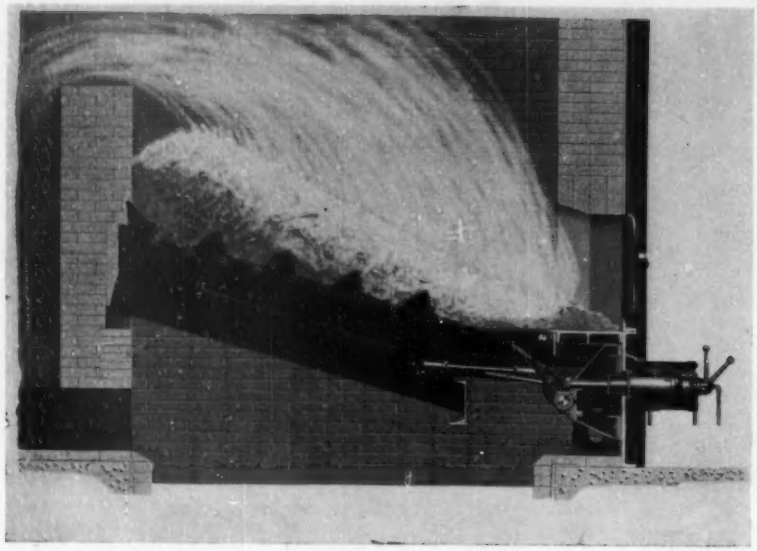
Contracts for the joint interceptor amounted to $1,347,600 of which Edina paid 44%. Richfield is building certain pumping stations and other portions of the interceptor for its benefit alone and is assuming the full cost for this.

The Richfield lift stations are being equipped with Chicago Pump Company Flush-Kleen pumps. All the sewage from the two villages will be measured at the Minneapolis city limits by a Parshall flume, using Builders-Providence metering equipment. The ultimate size of the flume will be 30 inches, but to begin with, in order to measure small flows, the 9-inch insert will be used.

The G. M. Orr Engineering Company of Minneapolis is consultant on the sanitary sewer construction. All street work was handled by Richfield's Department of Public Works.

Mixing operations for the 2-inch bituminous stabilized base with curb and gutter are part of the work done by contract.

The completed 2-inch bituminous stabilized base and bituminous curbs built for Richfield streets.



Rectangular furnaces can use Flynn and Emrich inclined grates to obtain mechanical stoking. The device stirs and works refuse down the slope to the dumping grate.

Incinerator Design

(Part II)

The furnaces, how they work, what types are available, what can be done to prevent air-pollution problems

By WILLIAM S. FOSTER, *Engineering Editor*, THE AMERICAN CITY

LAST MONTH'S installment analyzed factors that must be considered in designing an incinerator building. This discussion confines itself to the furnaces that do the burning.

For many years, the rectangular mutual-assisting cell unit was the most popular and, as a matter of fact, virtually the only type available. Most of these furnaces operate at a burning rate varying from 50 to 70 pounds of refuse applied per square foot per hour on the grates. This type, incidentally, still has many supporters. However, these furnaces require stoking by hand, which is arduous work, requiring a good deal of manpower.

In recent years, manufacturers have developed "self-stoking" arrangements that reduce this labor requirement substantially. Many designs are now prepared around a cylindrical furnace with a rotating cone and stoking arms mounted on the grate. Forced air enters the burning refuse through the cone and the grates; the arms, in turn, keep the mass loose to encourage burning. The Nichols Engineering and Research Corporation and Morse-Boulger Destructor Company, both of New York City, offer designs based on the circular, mechanically stoked type.

Stokers can reach the refuse from any point around the circumference of the furnace and need to reach only half-way into the interior, using light stoking irons. In contrast, the stokers must use heavy irons and reach from the front to the rear in the rectangular furnaces.

Self-Stoking Device

However, a self-stoking device for the rectangular furnace has been developed by the Flynn & Emrich Company of Baltimore. This device consists of an inclined grate which slopes from the back down towards the front. With this type, stoking sections of the grate rotate upward in alternate rows to constantly stir the refuse and work it down the slope to the dumping grate.

In addition, there are other types that supply a self-stoking feature that can be fitted to a rectangular furnace. F. O. DeCarie, of Los Angeles, has developed a two-level furnace. The refuse first drops onto an upper grate that has large rotating teeth where the initial burning takes place. The teeth of the grate then open, allowing the refuse to drop to the lower grate to complete the burning. The design appears interesting, and engineers are looking forward to more operating data which undoubtedly will become available in time.

However, regardless of the specific make of furnace, every engineer would like to know what sort of specifications he should write to get a good, workmanlike furnace and yet be fair to all manufacturers. If he simply asks them to design to their own standards a furnace able to burn the refuse "thoroughly and satisfactorily," he must reconcile himself to the fact that he forces the manufacturers to make their proposals dangerously lean.

If, on the other hand, he can offer exact standards for furnace design, then he places all designers on the same footing and removes much of the uncertainty from the work.

1. *Interior Furnace Area.*— One important point to consider is the inside area of the furnace. In times past, this requirement has been written so that the furnace can receive 50 to 70 pounds of refuse per square foot of interior area per hour of operation. On the basis of present operating figures, this range still remains good for the rectangular, mutual-assist

type of furnace, even when equipped with self-stoking devices. One need not fear the use of the 70-pound figure for the rectangular furnaces, particularly since the area supplied by the "drying hearth" in these furnaces is not included.

The cylindrical types appear to produce good operating results with grate areas that are reported to vary from 85 to 100 pounds per square foot per hour. The lower limit of 85 pounds probably is the safer figure to use in design.

2. ***Ignition Chamber Volume.*** — The volume of the furnace, or the ignition chamber, as it is often called, next requires attention. For all types, this seems to vary from 7½ to 11 cubic feet of volume per ton of rated capacity. A volume of 7½ cubic feet seems low; 9 cubic feet would be better; and 11 cubic feet would be wise if the refuse is preponderantly burnable rubbish. The operators must exercise caution, however, when placing the refuse in the furnace with these large volumes. A strong possibility exists that they will charge the furnace too heavily and interfere with the burning.

3. ***Combustion Chamber.*** — The next essential point is the combustion chamber, generally located outside of the furnace itself. All designs seem to be based on a figure of 15 cubic feet per ton of rated capacity, and all seem to give satisfactory service with this design.

4. ***Expansion Chamber.*** — The next consideration is the expansion chamber. In this chamber, the gases begin to be separated from the fly ash. Apparently, an estimate of about 12 cubic feet per ton of rated capacity supplies a large enough volume. Turbulence is important in the removal of fly ash. Some designers like to place curbs and baffles in the chamber to trap the fly ash the way snow is trapped behind snow fences. The expansion chamber should have plenty of clean-out doors to keep these "fly-ash traps" clear.

5. ***Stack Size.*** — The estimates for stack sizes is commonly set at 0.25 of a square foot per ton of rated capacity per 24 hours. The height of the stack often varies from 75 feet for a 30-ton plant to 175 feet or higher for a 300-ton plant. The stack is an obvious and easily identified object, thus making the incinerator subject to criticism by those who like to find fault. As mentioned in last month's discussion, the Hempstead, N. Y., plant has short, inconspicuous stacks. Induced fans help discharge the stack gases and provide draft for the furnaces.

These points, of course, should serve as general guides for the stack sizes. Stacks are, basically, a mechanical engineering problem. The density of the air in that vicinity, the density of the flue gas, the gas velocity and the quantity of gas flowing, and any frictional effects, all play a part in determining stack size.

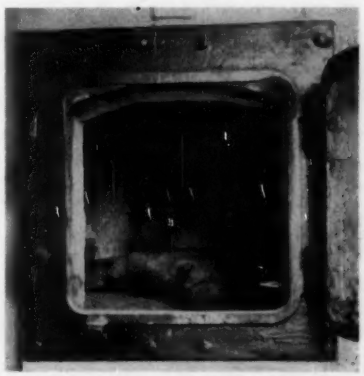
6. ***Air Quantity.*** — Air for the furnaces is another fundamental point. One fairly useful figure is 5 pounds of air for each pound of refuse incinerated. This probably should be increased if the refuse is high in combustibles.

7. ***Odor Control.*** — Operating temperature is another point that bears attention. Garbage has a reputation for producing bad smells. Since incinerators are associated with garbage, the public frequently associates incinerators with smells. The public sees the stacks, knows that the incinerator is there, and soon is sure that the gases leaving the stacks have offensive odors.

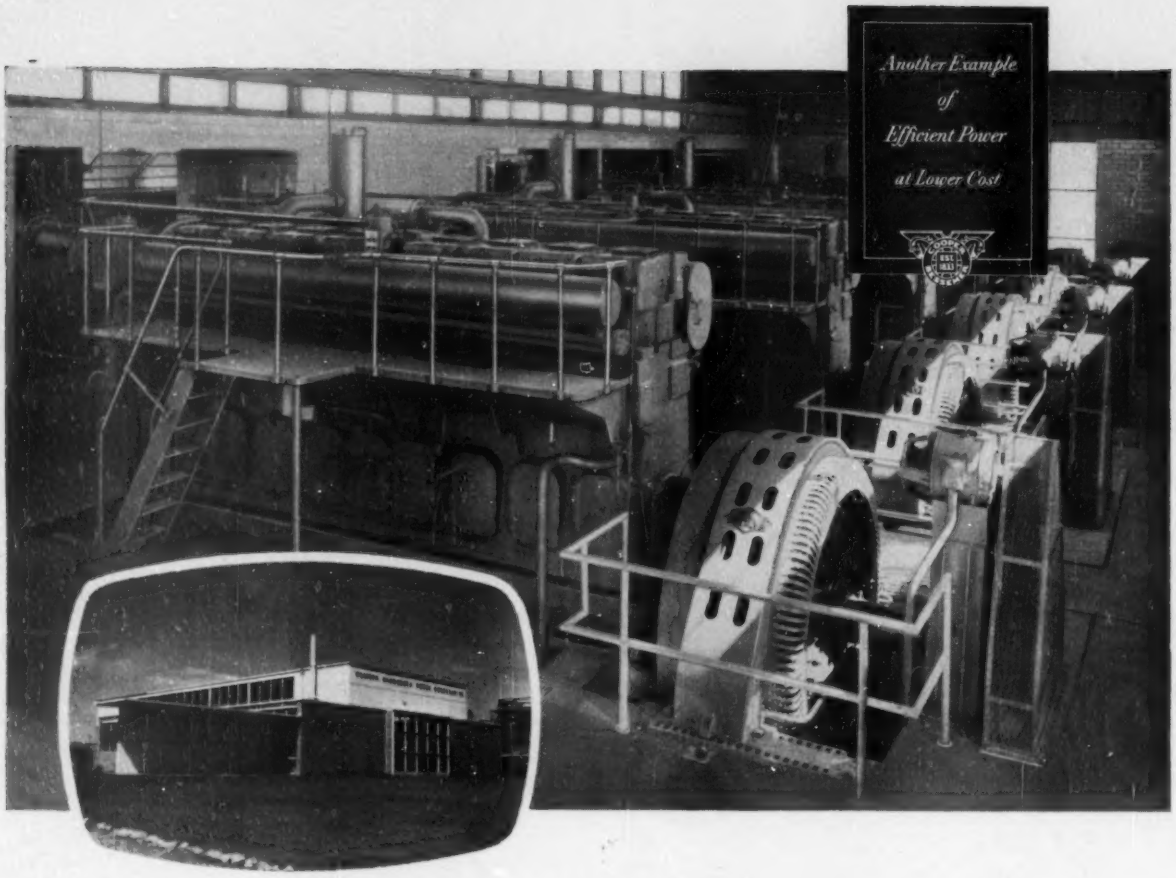
If the temperature in the combustion chamber remains consistently above 1,200° F., this odor problem cannot exist. Most unpleasant odors arise mainly from fatty acids which break down at around 800° F. Hydrogen, also in the refuse, ignites at 1,100° F.; carbon monoxide and methane at 1,200° F. With present refuse containing high contents of combustibles, most incinerators have no particular difficulty meeting this standard. In fact, many engineers work to keep the temperatures down.

The factor of air pollution is troublesome principally because it is so vague. In some localities, the designer has to meet a simple but often deceptive standard based on the Ringelmann color chart. However, as all

The incinerator at Long Beach, N. Y., has two Nichols Monohearth circular units fitted out with rotating stoking arms.



The interior of one of the Morse-Boulger units used in the Gretna, La., incinerator. Note the cone and rotating arms.



How Cooper-Bessemer after-cooling saves cold cash!

WHEN a generating plant's load demand suddenly grows much greater than anticipated, it normally poses a problem! But here at Western Minnesota Power Cooperative's plant near Benson, Minnesota, Cooper-Bessemer after-coolers came to the rescue by enabling their diesels to turn out over 22% more power than originally planned.

The plant started up in 1948 with 3 of the above Cooper-Bessemer supercharged LS-8 diesels rated 1,510 hp each. Two more LS-8's, equipped with air intake after-coolers, were added later and the original 3 engines were then likewise equipped with after-coolers. So equipped, the engines are rated 1,850 hp — a total gain of 1700 hp — actually equivalent to an extra engine! Think of the saving this means in space, building, installation cost, maintenance, supervision, etc. What's more, these engines are averaging 14 kwh per gallon of fuel oil on a 50% load factor.

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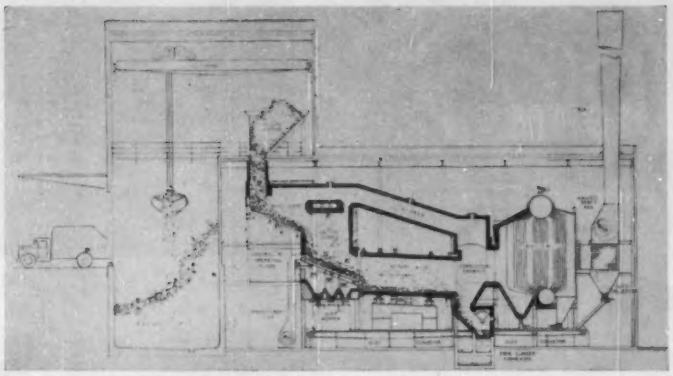

The incinerator at Atlanta, Ga., has a rotating kiln mounted on a slight slope. The design is a product of International Incinerators of that city.

know, a standard based fundamentally on color is not particularly good except from a psychological viewpoint. A lot of pollution can enter the air and cause trouble that won't color the smoke enough to raise a danger signal on this standard.

Some air pollution standards have borrowed from the mechanical engineers who specify that for coal-fired furnaces the discharged gases should contain no more than 0.85 of a pound of solids per 1,000 pounds of gases, based on 50% excess air with 12% carbon dioxide content. Both these represent normal operating conditions for coal-fired equipment, but not necessarily for incinerators.

Incinerators generally operate on a 3% to 6% carbon dioxide content. Excess air may amount to as much as 300% when the big charging doors open. Adjusting the solids content to the equivalent of 50% excess air or 12% carbon dioxide will produce a very strict standard.

In any case, the aim of the air-pollution abatement engineer is that of keeping solids out of the atmosphere, not excess air. A standard based on limiting the discharge to a specified number of pounds of solids per hour of operation would seem more practical.

Water Sprays

However, if solids need to be removed to a greater extent than the expansion chamber will provide, then water sprays in the expansion chamber will help. The fact that this water has to exist in an atmosphere of 500° to 800° F. indicates that the water requirements will be heavy. One estimate is that roughly 400 gallons of water will be required per ton of refuse burned.

The water can serve two purposes. The droplets will actually trap some of the fine particles and remove them from the gases. Also, the water will cool the gases, reducing the volume and slowing its passage through the chamber. This allows more solid matter to drop away.

There are other ways of cooling the gases in the expansion chamber. The heat represents useful energy that occasionally can be extracted and put to work. Some incinerators pass the gases through boilers and generate steam, used for heating and power. Some place preheater tubes in the chambers. These tubes form passageways for the air used in the forced-draft system of the furnaces. If the air is hot when entering, the burning can be expected to be improved. However, with today's light, burnable refuse, this is not often needed.

Other Furnace Types

The municipal field has other types of furnaces at its disposal, also. One is the Volund design in which the burning proceeds inside an inclined, rotating kiln. This design has the advantage of continuous feeding. The only installation of this kind in this country (10 to 12 are reported to be in operation in Europe) is at Atlanta, Ga., where it does a very thorough job of burning and, in the process, develops steam that is bought by a local power company. This and other income-producing features make the plant virtually self-supporting.

This type of furnace currently is being sold by International Incinerators, Inc., of Atlanta. The company officials state that it is useful primarily in the great cities, probably with a population of 250,000 or more.

New York City, also, has an interesting incinerator design, built around the chain-grate principle. Its nearby suburb, Engelwood, has used an incinerator of this type for many years. However, the many movable parts in a chain-grate design has never made it popular.

Thus, some of the signposts pointing to better incineration begin to add up. Know your refuse, understand your operating conditions, and from this understanding, decide whether you will be served better with a plant using a storage pit and crane, or one that charges its refuse directly from the floor. Give your contractors some standards to use when offering proposals for their incinerator, such as grate area, furnace volume, combustion chamber volume, and expansion chamber volume.

Finally, adopt a practical attitude toward the possibility of air pollution from the stack gases. Remember that the incinerator is not burning a consistent fuel under controlled conditions, but a wonderfully inconsistent product charged through a door that is 4 feet square and is frequently opened.

Better Planning Needed For the Pedestrian's "Simple and Venerable Delights"

WALKING is not only one of the healthiest physical exercises, but brain and general nervous activity, as well as emotional satisfaction, have for millions of years been obtained in the rhythmical sensations which accompany the pedestrian. Yet when he ambles along a motor road and is being overtaken every few seconds by a speedy vehicle, not to speak of the nuisance to him of dust, noise, or gasoline fumes, the mere comparison of speed disheartens him, turns walking into a nuisance, and gives it the accent of backwardness.

Our cities invest tremendous funds in fast and faster locomotion, but the pedestrian's simple and venerable delights are poorly provided for. Speedy freeway interchanges are designed with amazing budgets in land and money to make a left-hand turn transacted in a few seconds less. On the other hand, funds are lacking to realize a well-landscaped safe promenade like a schoolwalk, which young children could take to kindergarten or elementary school without any anxiety of parents to see them killed or crippled by rolling traffic.

RICHARD J. NEUTRA

From a paper on "Influence of Science on the Metropolis," presented on January 8, 1954, at Columbia University's Bicentennial Conference on "The Metropolis in Modern Life."

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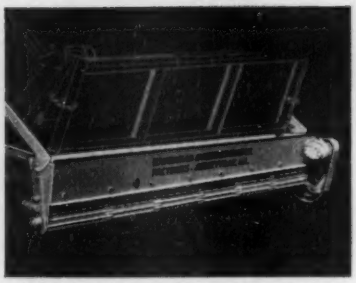
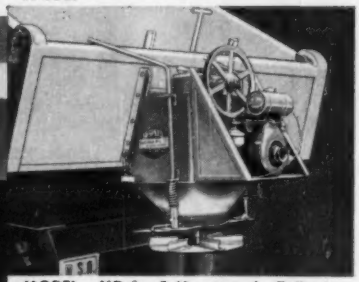


MODEL 51-HDC Hydraulic "Cinder Cracker" (Chain-drive MODEL 51-CDC similar). **Bulletin A-354.**

MODEL KMC-4. New Fifth Wheel design for positive spread control of sand, cinders, salt, etc. Drop-bottom adaptable to off-season hauling and dumping. **Bulletin A-380.**



MODEL MD-1 Self-powered Tailgate Spreader for dump truck ice control. **Bulletin A-357.**

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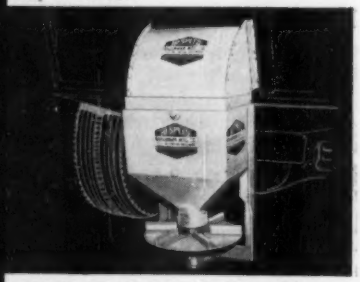

MODEL HD-51 Hydraulic-driven Tailgate Spreader with cab control. **Bulletin A-353.**

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MODEL 51-SM "Salt Miser" scatters salt or chloride. Self-powered. **Bulletin A-350.**

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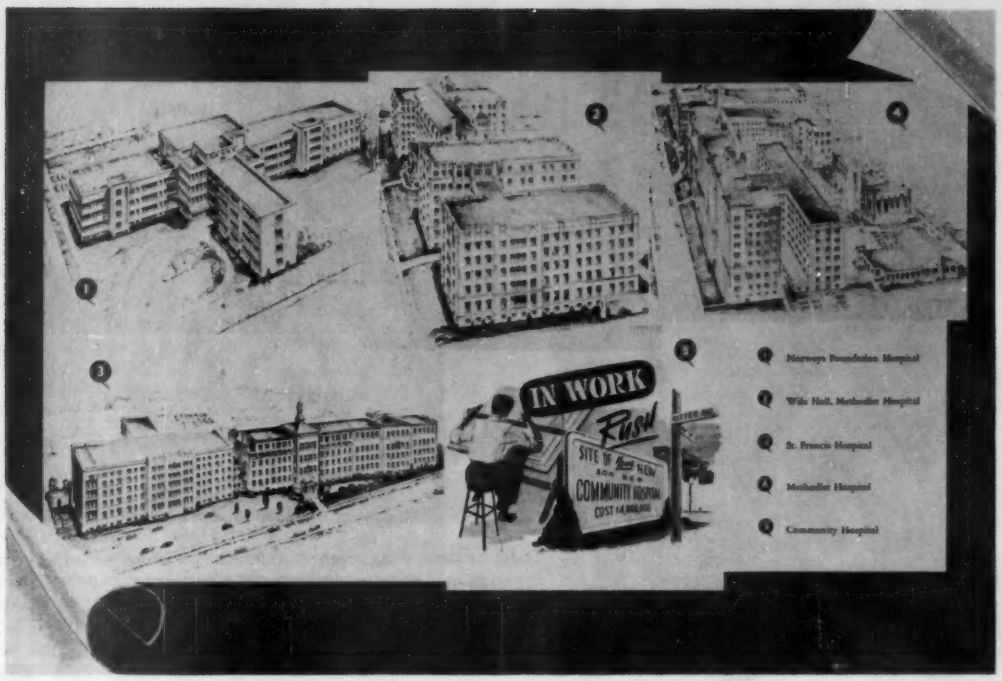


New or enlarged hospitals now assured for Indianapolis.

Five Indianapolis Hospitals Succeed In $12,000,000 Development Campaign

By JACK KILLEN
Executive Secretary
Indianapolis Hospital Development Association, Inc.
Indianapolis, Ind.

A SUBSCRIPTION TOTAL of $12,090,787 was announced on December 17, 1953, by the Indianapolis Hospital Development Association, to its appeal for $12,000,000 of voluntary funds. This event, significant in the history of hospital financing, was recognized by President Dwight D. Eisenhower in a letter which stated:

"The success . . . is a tribute to excellent organization, rare diligence, and a warmly responsive citizenry in your community. This success is evidence, furthermore, of a most commendable spirit of self-reliance in your community. Accomplished without the participation of federal or local government, this campaign is a stirring example to all citizens, everywhere, who are striving for the improvement of their respective communities."

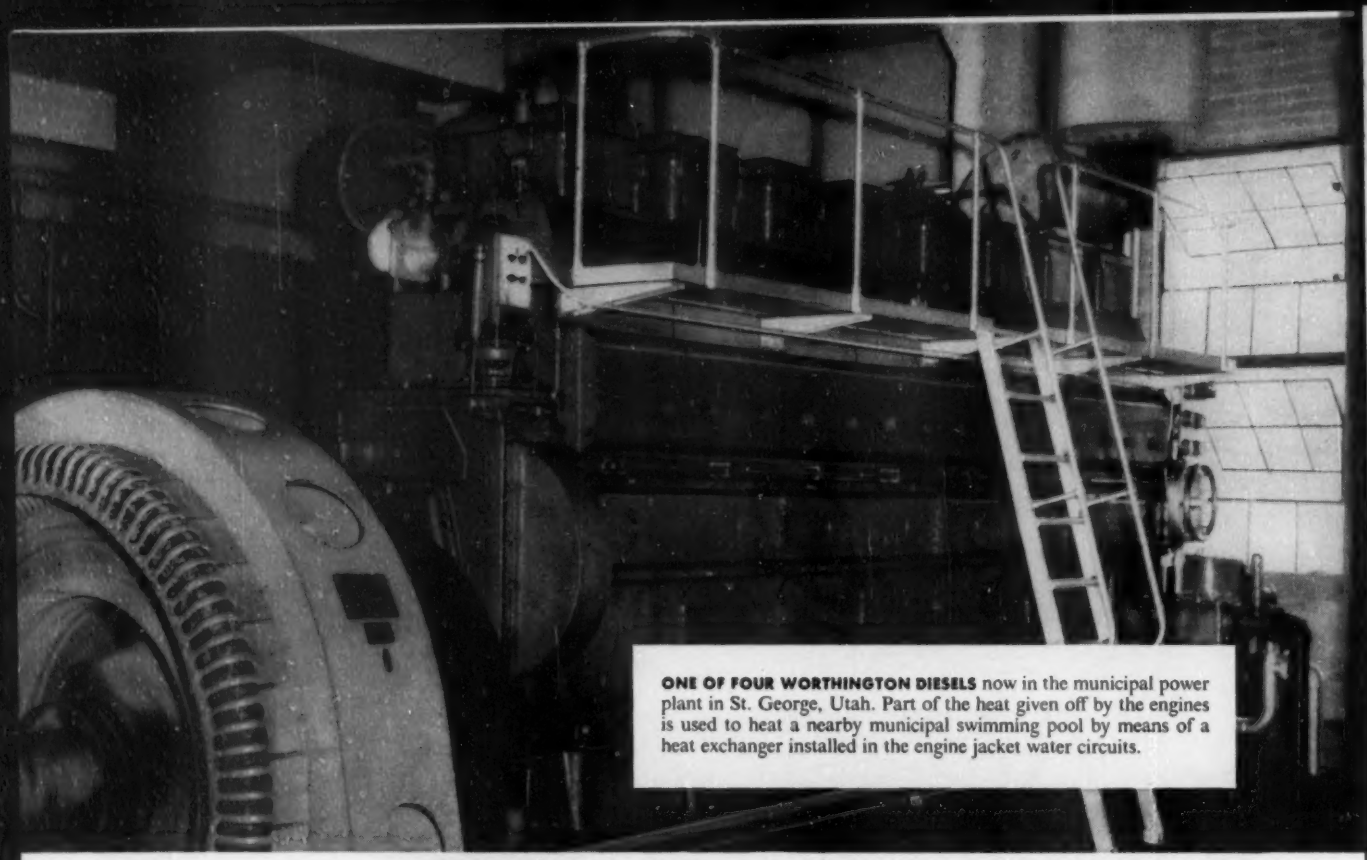
Few persons, even among the warmly responsive citizenry of Indianapolis and Marion County, Ind., with a population of 500,000, are fully aware of the many and thorough steps which produced this achievement. True, there was singular need for more hospital beds. None had been added to voluntary hospitals since 1931. Since that time, the city's population has increased by 135,000—a growth equivalent to the total population of Fort Wayne, the second largest city in Indiana. Also, hospitalization insurance had been sold to over 1,000,000 customers by one company alone in Indiana. Industrial expansion in Indianapolis was made to the tune of $365,000,000. And even more than ever before, doctors with limited facilities in their offices were sending their patients to hospitals. But the needed hospital beds were not being provided.

No person or group in the county felt competent to state the case authoritatively. The Indiana State Board of Health had a plan; each of the individual hospitals had some idea as to its own limitations; and the physicians of the city had been agitating for some time for something to be done, each in the light of his own staff relationships and needs. But definitions of the problem and objectives were lacking. Information was not centralized, and the picture was confused.

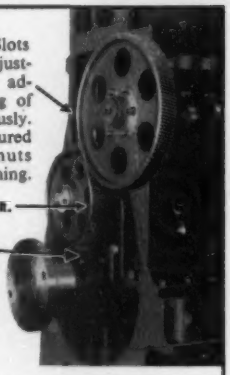
Local Leadership Enlists Expert Advice

This is when the Chamber of Commerce of Indianapolis began to take notice. Also a handful of public-spirited business leaders became interested. Faced with a problem, they responded as they would have done in their own successful businesses. Their simple method of operation was to secure expert advice as needed, to take first things first, and not to let the ramifications of the program lead them away from the main objective of financing hospital facilities to be used by people who get sick and need them.

First, they were faced with determining the needs of the citizens in



ONE OF FOUR WORTHINGTON DIESELS now in the municipal power plant in St. George, Utah. Part of the heat given off by the engines is used to heat a nearby municipal swimming pool by means of a heat exchanger installed in the engine jacket water circuits.



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used on these Worthington dual fuel engines . . .

1. Provides accurate and positive control of engine timing.
2. Is located at flywheel end of engine for smooth gear operation as power impulses are absorbed by the flywheel.
3. Uses controlled automatic oil jet lubrication that eliminates wear.
4. Assures correct engine timing . . . keeps engine running smoothly . . . results in low fuel consumption and minimum engine maintenance.

Good planning keeps municipal power plant profitable

Eleven years ago, the City of St. George, Utah, started power-plant operations with two Worthington four-cycle, direct injection Diesel engines. Today, the capacity of St. George's plant is 500% greater than it was in 1942—and profits are still being returned to the City of St. George.

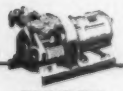
St. George planned its power plant to keep pace with increasing power needs and to continue to show profits. That's where Worthington came in. Worthington engineers helped St. George select exactly the right size and type of equipment—engines, circulating water pumps, fuel transfer pumps and air starting equipment.

Because of its complete satisfaction with the original Worthington units, St. George purchased a third Worthington Diesel in 1947, a fourth in 1949, and a fifth in 1950. At present a total of four units are in operation, one unit having been replaced by a larger unit in 1950.

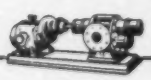
Worthington may be able to help save power costs for your community, too. Write your nearest Worthington district office or Worthington Corporation, Engine Division, Section E.3.2, Buffalo, New York.

E.3.2

Worthington-Built Auxiliaries



ENGINE STARTING COMPRESSORS



OIL TRANSFER PUMPS.

COOLING WATER CIRCULATING PUMPS

EVAPORATIVE-TYPE ENGINE WATER COOLERS

WORTHINGTON

Engines

Economical Continuous Power—Diesels, Oil and Dual Fuel, and Spark-Ignition Gas Engines, from 190 to 2,100 bhp.

terms of hospital beds. To solve this problem and to start a federation of all the voluntary hospitals, James A. Hamilton and Associates of Minneapolis were called in to make a complete survey. Second, was the matter of securing the money to pay for the survey.

This job was tackled in the spirit of Hoosier independence. All Hoosier problems, these leaders decided, should be handled in a way that was compatible with the Hoosier way of thinking. They made the decision then to go it alone, asking for no help from any governmental agency. After all, they argued, who built our hospitals? Wasn't it our independent forebears, and hadn't they done it for themselves the voluntary way? Should not we do the same for ourselves and the next generation?

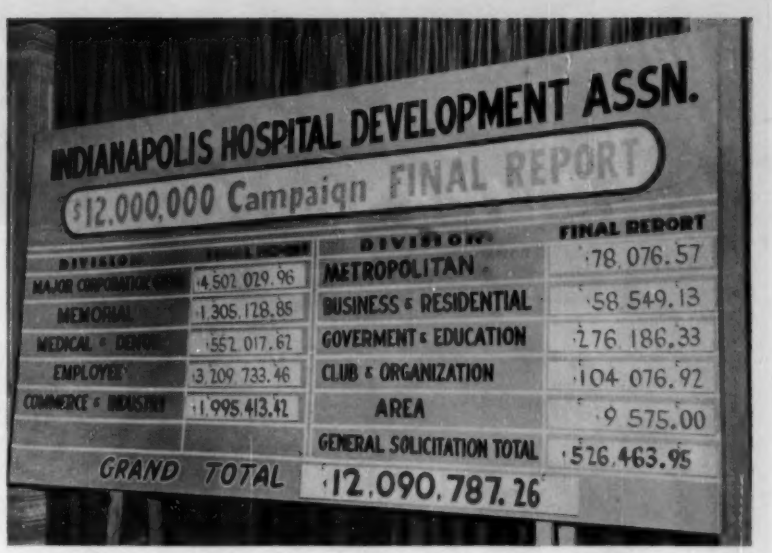
The survey clarified the problem, pointing up the immediate need for an additional 628 beds for general acute care patients, and the replacement of a 100-bed facility for private psychiatric patients. This included also one new 300-bed hospital to be organized, built, and put in operation. The combined cost, $12,000,000, would be an amount equal to seven times the money raised in any voluntary philanthropic effort in the history of Indianapolis.

There were a few who said that no such ambitious program should be undertaken; that instead, bonds should be sold. As Hoosiers and good business people, though, it was not difficult for them to realize that there would be no market for bonds to build voluntary, not-for-profit, hospitals. There were many who said the program could not be successful.

Again, the leaders in charge of the program, now incorporated and expanded by several score business-head board members, agreed there was no one man with sufficient fund-raising background of experience in the city to undertake the financing job alone, volunteer or otherwise. At this point, they agreed on securing the American City Bureau to manage the campaign. After all, this company had several thousand campaigns under its belt and in these had directed the raising of over $300,000,000 in the 40 years of its existence.

Record-Making Community-Wide Response

From the outset, December 1951, campaign planning paralleled the assimilation of the idea and the sales program. Top leadership was enlisted from every field — industries, business, schools, churches, labor unions,



The Final Scoreboard in the Indianapolis Hospital Revelopment Campaign.

political forces. With the growth of the organization came pace-setting pledges from virtually all the major companies. Then smaller businesses were approached, coincident with the start of a general sales program for over 100,000 employed workers in all groups, large and small. Payroll deduction and in-plant solicitation programs were conducted by nearly all companies, a new peak of cooperation from citizen businesses. A nationwide record for participation was set, and subscriptions totaling over $3,500,000 were received from the gainfully employed.

The result, on December 17, 1953, just 24 months after starting, assures the 120,000 contributors that Indianapolis will have adequate hospital beds in the near future, and the waiting list of over 1,000 people who want hospital beds will be eliminated.

The first project, the new 300-bed hospital, will start construction in March 1954, to cost $4,800,000, and to be paid for from the $6,500,000 of funds already paid in. Collections of substantial amounts are coming in monthly, and are expected to reach a total of $2,000,000 in 1954, a similar amount in 1955 and 1956, in ample time to take care of the building program of the other hospitals as they progress.

Coordinated Approach Urged To Solve Metropolitan Problems

THE PROBLEMS of metropolitan areas must be attacked on a nationwide and coordinated basis. Resources must be pooled in terms of inventorying, surveying, and appraising the experience of municipalities and other governmental agencies that have attempted solutions and intergovernmental cooperation to meet the "march to the suburbs."

These were the recommendations of Frank C. Moore, President, Government Affairs Foundation, and former Lieutenant-Governor, New York State, at a panel discussion in January, sponsored by the New York Metropolitan Chapter of the American Society for Public Administration.

Mr. Moore said that his organization has listed the metropolitan area problem as having priority in its work program, and that the Foundation expects to enlist the support of other agencies on such a coordinated approach to metropolitan difficulties.

Other speakers at the meeting included Hugh R. Pomeroy, Director, Westchester County Department of Planning; Paul Studenski, Professor of Economics, New York University; Robert W. Dowling, President, Citizens Budget Commission; Henry W. Connor, Director, Bureau of Municipal Research, Newark, N. J., and Luther H. Gulick, City Administrator, City of New York. Moderator was Sterling D. Spero, Professor of Public Administration, New York University.

there's an EDDY valve or hydrant to fit the pipe in your water distribution system...

Since 1849 EDDY For Long Service

EDDY BELL END VALVE

EDDY BRONZE MOUNTED GATE VALVES

offer simplicity of design, trouble-free operation and enduring service. From the engineering drawing boards through all stages of manufacture, they are step by step a truly "finished" product of workmanship. These factors, added to personal experience, are reasons why progressive water works men have relied on Eddy Valves for years.

EDDY MECHANICAL JOINT VALVE

Two unskilled workmen, using only a ratchet wrench, can quickly install the Eddy Mechanical Joint Valve. Work can be done in a flooded trench or under any weather conditions, for no caulking, no lead-melting is necessary. Every joint is held bottle-tight under pressure. Available in sizes from 3 to 12" for use on both centrifugally-cast and sand-cast pipe.

EDDY BELL END HYDRANT

EDDY BRONZE MOUNTED HYDRANTS

are built for dependability and lasting service. They open smoothly *with* the pressure and close without water hammer. One man can easily remove all operating mechanism for inspection and repair. Positive drip action automatically drains the standpipe, safe-guarding against freeze-ups. Stem held in place below main valve means no water loss due to a bent stem.

Equipped with mechanical joint connection, Eddy Hydrants can be quickly installed, requiring a minimum amount of labor. A ratchet wrench is the only tool needed. Available with or without auxiliary valve.

EDDY MECHANICAL JOINT HYDRANT

Send today for full information on the complete line of Eddy Valves and Hydrants. No obligation.

EDDY VALVE COMPANY

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WATERFORD, NEW YORK

Iowa City Finds

Central Purchasing Is Better

By ROBERT E. MEYERS *

CENTRALIZED PURCHASING of gas, oil, and tires started in Iowa City in August 1951, for the purpose of saving money for the city. Let us examine procedures and costs in the last six months of departmental buying (January-June, 1951) and in the last six months of centralized buying (May-October, 1953). Costs quoted will be net cost to the city, with federal excise tax and state sales tax, where applicable, excluded. State road tax, which the city must pay, is included in the cost.

Before Centralization

Each department head acted as his own purchasing agent. Since there were no storage facilities, gas and oil had to be purchased directly from a gas station at the time it was delivered to the vehicle, usually at the regular retail price. However, those departments which used greater quantities were able to secure gas and oil at a somewhat lower price.

The department heads commonly passed their business around among the various stations. There was no coordination between departments to select the same stations. For instance, in March 1951 the Street Department purchased gas and oil from 10 different stations and the Police Department from three different stations.

Each department kept its own records of its gas purchases. The driver of a city vehicle could go to the station designated by the department head and receive the gas and oil the vehicle needed. He would sign a receipt and receive a duplicate. This duplicate he would turn over to the department head. Once a week, the department head would turn the duplicate receipts in to the city clerk.

The various service stations from which purchases had been made would bill the city at the end of the month. The city clerk would then have to check each of these duplicate receipts turned in by the department heads against the bill submitted by the gas company. The Street Department alone would make as many as 50 or 60 purchases a week, and the Police Department, 20 or 25.

As many as 15 different stations submitted bills. Usually the federal tax, from which the city is exempt, would be included in the bill and the clerk would have to compute and subtract the tax from the final bill. Warrants, for the payment of these bills, would have to be made to service stations, and often there was one from each of the departments to the same station. These warrants ranged in size in March, for example, from $1.27 to $98, there being a total of 23 warrants issued for gas and oil purchases.

If tires were needed, the department head would inquire the price from the various tire dealers, and would then decide from which dealer he wished to make the purchase. He would then request action by the City Council, which would pass a resolution authorizing the department head to make the purchase at a price not to exceed the amount named by the department head. Each tire or set of tires required a special resolution by the Council.

After Centralization

An underground storage tank and a meter gas pump were installed at the city yards, and space was made for storing oil. Four dealers returned bids on 10,000 gallons of gas and 250 gallons of oil, delivered to the city yards as needed.

A daily gas and oil report was devised to be filled in as city vehicles received gas and oil. This daily report and the gas tickets were forwarded to the city manager's office. They were totaled monthly and each department charged for the gas and oil it had used at the prices under the current bid.

All requests for tires now come through the city manager's office. The department head requests the size, ply, and grade of tire wanted. The city manager asks bids from all dealers that handle the tire specified. The city manager is authorized to make the purchase and the council is relieved from passing a resolution for every tire purchased.

Tires

Among the tires purchased in 1951 were a complete set for one police squad car and two tires for a maintainer-grader. The five tires purchased for the squad car were 710 x 15 premium-grade tires; the cost was $175.28 for the five tires and tubes. A 9 x 24 grader tire was purchased at $117.56; a single maintainer tire, size 13 x 24, was purchased at a cost of $152.04.

In June of 1953, bids were taken on tires for a police car. These tires were to be the same grade and size and were to be used for the same purpose as were those purchased in 1951.

The dealer from whom tires were purchased in 1951 submitted a bid of

* Robert E. Meyers is a graduate student in Public Administration at the State University of Iowa, and is also a part-time employee of the City of Iowa City.—PETER F. ROAN, *City Manager, Iowa City, Iowa.*

Before and After Purchases and Prices

GASOLINE

	January–June 1951		*May–October* 1953	
Departments	*Gallons*	*Cents Per Gal.*	*Gallons*	*Cents Per Gal.*
Street	7,349	25	6,840	..
Police	3,226	26	5,320	..
Fire	640	21½	742	..
Sanitation	.....	..	2,730	..
Other	193	25½	1,351	..
Total	11,408	25	16,983	20
OIL				
All	625	25½–38 (30 avg.)	995	.. (19 avg.)

527.92 for tires and tubes, or $138.68 for the set of five. A comparable tire and tube from a different dealer was purchased, however, at a cost of 27.72 per tire and tube. The price paid for these tires in 1953 represents a savings of 31% over the price paid in 1951.

Although no maintainer-grader tires were purchased during 1953, bids are on file for these same-size tires. The more recent prices are from 10% to 30% less than were those charged before centralized control was established.

Conclusion

Do the lower prices reflect a general decline in costs? Let us see. During the "before" period the open market pipeline price of gasoline at Iowa City averaged about 12 cents a gallon. This market price of gasoline on which all other prices (retail, dealer, tank wagon, etc.) are based, varies from week to week and month to month. This is the base price, exclusive of all taxes and transportation charges.

In 1953, from April to October, this pipeline price was slightly higher, around 12.29 cents per gallon. Thus, even though an increase in the base price has been evidenced, the city has been able to purchase gas at a lower price in 1953 than it could in 1951. The picture is much the same for oil and for tires.

The savings that have been realized in dollars and cents have not been offset by any increase in wages or by the addition of any personnel to operate the plan.

The City Clerk has been relieved of the task of checking many receipts and bills sent to the city. This job, which formerly occupied one full day each week of the clerk's time, is now performed in one day each month, by one of the clerk typists. The number of bills received by the city is one instead of the onetime 15 or 20.

Department heads have been relieved of keeping their own records and of selecting the place where the gas and oil will be purchased. The Council has been relieved of the necessity of passing a special resolution for each tire purchase.

Actual savings seem to amount to 5 cents on each gallon of gasoline and 10 cents on each quart of oil. As the city uses 40,000 gallons of gasoline a year, this means $2,000 a year saved under the new system on gasoline alone. The savings in oil are proportionately greater, and the city is buying three quarts at the price it formerly paid for two.

The most recent bids received by the city and the ones under which they now operate call for the delivery of gas at a cost of 20.3 cents per gallon. Oil is being purchased at 71 cents a gallon, or 17.7 cents per quart. The last request for bids saw 11 dealers bid on the gas and oil.

Grosse Pointe Woods, Mich., Presents the Facts

ALL THE FACTS about garbage sanitation and the part that kitchen garbage grinders play in their elimination were published recently in a newspaper-type supplement and distributed to all the property owners of Grosse Pointe Woods, Mich., a community of 11,000 located near Detroit. The supplement was complete with appropriate drawings, facts, and figures.

The drawings illustrate how much physical handling of these food wastes the grinders eliminate as well as how they prevent nuisances and health hazards from flies and rats.

The Grosse Pointe Press

Municipal Supplement

GET RID OF ALL THIS WITH A

GARBAGE GRINDER

GROSSE POINTE WOODS GARBAGE DISPOSAL PROBLEM IS SOLVABLE

Garbage Is Illegal In Jasper, Indiana

Advocates Abolition of Garbage

Shorewood Hills, Wisconsin, Pleased With Grinder Plan

Problem Can Be Solved In A Sanitary Manner At A Substantial Saving

Sales of Disposers Climb In All Areas

Health Officer's Opinion of Grinders

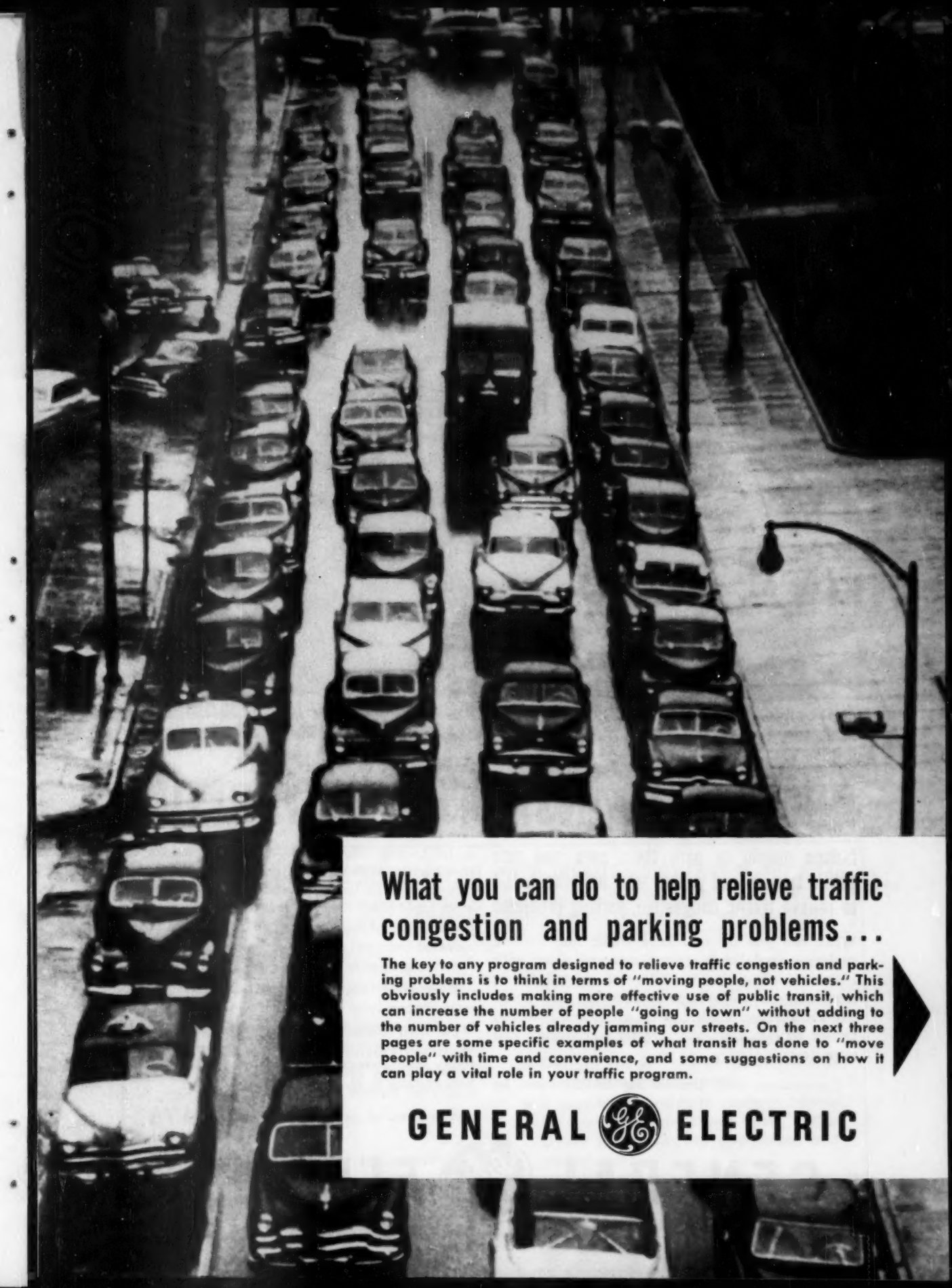
The facts and figures included newspaper-type stories reporting the experiences of Jasper, Ind., Shorewood Hills, Wis., and home builders in Los Angeles, Cleveland, Washington, and Detroit, all communities that have taken positive action to eliminate garbage collections by the use of these grinders.

Also quoted was the opinion of consulting engineers, Pate and Hirn, who assured readers that the grinders would operate without ill effects on septic tanks, and an endorsement of the grinders by the Wayne County Health Department. It quoted from *The Municipal Index* the questions that are most frequently raised about the garbage grinders and published their answers.

The Property Owner Petitioned

The supplement also contained a petition to be signed by the property owner requesting the discontinuance of garbage pick-up as a city function beginning July 1, 1955, and the installation of garbage grinders on either of two separate financing plans.

One plan anticipates the city's spending $130 for each grinder which will be repaid by the homeowner at the rate of $5 per quarter applied to the water bill over a period not exceeding 6½ years. The second plan calls for the payment of $115 in a lump sum.



What you can do to help relieve traffic congestion and parking problems...

The key to any program designed to relieve traffic congestion and parking problems is to think in terms of "moving people, not vehicles." This obviously includes making more effective use of public transit, which can increase the number of people "going to town" without adding to the number of vehicles already jamming our streets. On the next three pages are some specific examples of what transit has done to "move people" with time and convenience, and some suggestions on how it can play a vital role in your traffic program.

GENERAL ELECTRIC

OUTLYING PARKING AREAS and crosstown feeders co-ordinated with speedy transit service (as at Shaker Height Rapid Transit, Shaker Heights, Ohio), offer convenient, comfortable transportation.

PROVIDE TRANSIT THAT SAVES TIME

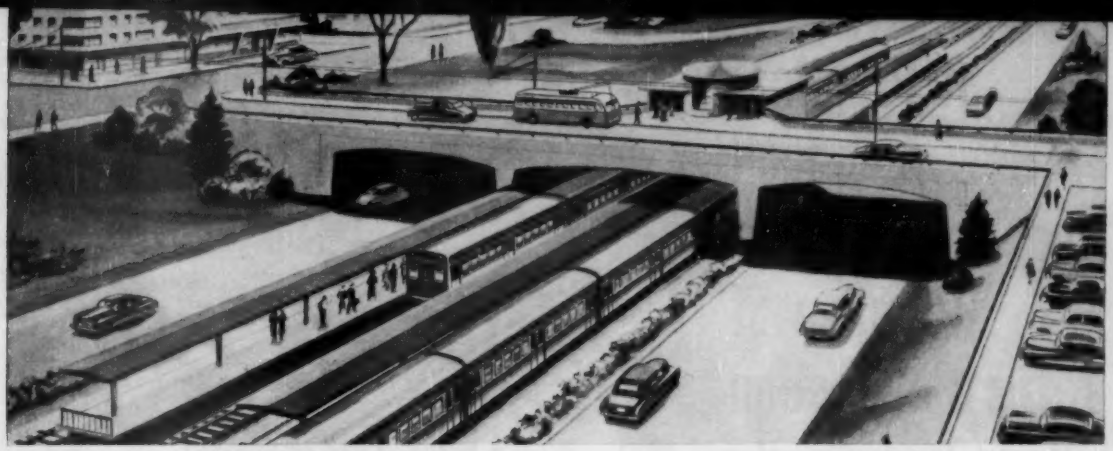
Induce people to park their cars and ride public transit, and you've won half the battle to relieve traffic congestion, parking problems

What can you do to relieve traffic and parking problems, and bring greater economy along with higher traveling speeds and more safety? Public transit is your major hope in achieving these goals. To win a larger number of transit riders, however, transit service must offer greater convenience and save time.

Convenience and time-saving features can be added to your city's transit system by making sure that surface vehicles have freedom of movement on city streets. In large metropolitan areas, fast, efficient rapid transit service can be provided by using center lanes of expressways, railroad rights-of-way, elevated lines and subways.

Everybody benefits—riders, businessmen, and even those who must drive—when traffic-free arteries are provided for public transit service. It's of vital importance to the well-being of your city today, and tomorrow. General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC



CONGRESS STREET SUPERHIGHWAY, now under construction at Chicago, is good example of traffic-free artery used to relieve traffic congestion and speed transit service in large metropolitan areas.

MOVE PEOPLE, NOT VEHICLES is key to solution of traffic congestion problem. Modern electric trolley coaches, with large carrying capacities, are potent factor in clearing city streets, speeding transit.

AND OFFERS GREATER CONVENIENCE

DRASTIC ACTION MAY BE NECESSARY TO SPEED TRANSIT MOVEMENTS IN THE CITY

Transit vehicles can be effective in reducing traffic congestion only when they can provide a margin of speed and convenience. To increase the speed and convenience of surface transit vehicles, these steps should be taken on transit streets:

- **Eliminate parking and stopping wherever and whenever it reduces transit speeds.**
- **Eliminate on-street loading and unloading of trucks and delivery vehicles on streets wherever and whenever it reduces the speed of transit service.**
- **Eliminate left-hand turns in congested areas.**
- **Eliminate right-hand turns across transit vehicle muzzles at stopping points.**
- **Regulate traffic for transit vehicles, affording them the same treatment as fire apparatus or ambulances.**
- **Design special signal arrangements to enhance transit speeds.**
- **It may be desirable in some instances to devote certain street lanes exclusively to transit, fire apparatus, and ambulances.**

to help you tell the transit story in your community . . .

A Practical New Approach to the Ever-Growing Problem of Traffic Congestion in Your Community

"GOING PLACES"

A 16-mm, 17-min. documentary sound motion picture in full color

Watch traffic pile up right before your eyes because thousands of people try to drive down the street at the same time.

Witness the pleasure that people feel as they ride safely, comfortably on transit vehicles through uncrowded streets.

Watch public transit . . . operating on streets and private rights-of-way . . . move as many people as thousands of cars.

This Valuable New Film Is Available *Now* for Showing to All Interested Groups

Moving people in a community is the daily problem of urban-transit operators. It also concerns every public-spirited citizen interested in the welfare and growth of the community.

Many civic leaders are earnestly interested in their local-transit problems, but are unfamiliar with some of the modern approaches offering solution.

To assist in telling the urban transportation story, General Electric has produced a 16-mm, 17-min. documentary motion picture in full color and sound. It approaches the urban transportation problem purely from the most efficient ways to move large numbers of people. Scenes were filmed of actual operating conditions all over the country, and the use of color heightens the impact.

The film, newest in the More Power to America series, is available for showing to civic groups, community officials, and other interested parties. Ask your local urban-transit operator to arrange for you to see it, or contact your nearest G-E office.

General Electric Company, Schenectady 5, N. Y. 107-19

You can put your confidence in—

GENERAL ELECTRIC

The author (standing at left) and some of his Underwood Sundstrand tax-accounting machines.

Tax Machines Save Jackson County $25,000 a Year

By BEN NORDBERG, *Clerk*
Jackson County Court
Kansas City, Mo.

IN JACKSON COUNTY, MO., there is a total of 185,000 pieces of real property, and 204,000 pieces of personal, and 10,750 merchants' and manufacturers' assessments on which computation of the state, county, school, library, and in some cases, fire, sewer, and water taxes, as well as the total tax, must be computed.

These individual tax amounts must be printed in the appropriate columns on the tax rolls, as provided by law, and the taxpayer must be given a receipt showing these same amounts. The county collector must be furnished copies of these statements for abstracting and other accounting purposes.

The operation of Underwood Sundstrand Tax Billers is so simple we do not require specially trained personnel; anyone can operate this equipment with only a few minutes' instruction. All the operator does is insert and remove the forms and write the assessed valuation on the keyboard—nothing more—all of the computations are made and printed in the proper columns automatically, even to the correction of each tax amount, to the nearest penny.

Totals for each page are accumulated automatically, and proof of accuracy of each page is established by computing the total valuation shown for each page and comparing this computation with the stored totals. The recap of each tax book is also handled automatically through use of this equipment.

As soon as personal tax assessments have been returned to the Assessor's office, these machines are used to print the assessed values for each class of personal property on tax rolls. The machines prove the accuracy of each line and carry page totals for the various classes of property.

The value of Land Improvement—Total Value is also placed on the real-estate rolls by use of these machines, and again, proof of accuracy and page totals are secured automatically.

Addressograph equipment is used to place the names and property descriptions on the tax rolls and statements. After tax statements have been mailed out and payments are received, the county collector uses these machines to abstract the taxes so that the amounts due the state, county, school, etc., can be properly apportioned.

We also use these machines in the bookkeeping of our withholding and social-security taxes, as well as employee earnings. The machines have reduced the social-security work from 20 days to 4 days per month, and have reduced the time required to extend taxes from 6 months to 60 days.

I would estimate our savings to be about $25,000 per year compared with the manual operations that preceded the use of these machines.

Another important feature of the system is that taxpayers now mail their tax payments in to the collector, thus saving them many hours of inconvenience and expense, and also eliminating the former congestion in the collector's office during the tax-paying periods.

Urbanized Land Only 2% of National Total

DESPITE the tremendous growth of American cities and suburbs in the last 50 years, less than 2% of the nation's land is devoted to urban and industrial uses and rural nonfarm home sites, according to the Urban Land Institute, Washington, D. C., an independent research organization.

"Thus, a further expansion of even 50% or 100% in the number or size of our towns and cities would scarcely create a serious land problem," the Institute said.

"However, even though the amount of land occupied is relatively small, the urban and nonfarm areas account for an overwhelming percentage of the national wealth, property valuation, and tax collections.

"All urban and nonfarm land combined yields approximately 88% of all taxes collected and accounts for 85% of total land values in the United States.

"In addition, it produces 93% of the national income, and its residents receive 90% of the nation's money income."

Chassis of Tabet Photoelectric Control for street lighting, showing operating mechanism. 1, photocell. 2, amplifier tubes. 3, filament transformer. 4, power switching relay (underneath, not shown) which handles up to two 15,000 lumen lamps or a large number of auxiliary relays. 5, pilot relay to control power switching relay. 6, protective fuse.

Dependable Tabet Photocell Assures Positive Control of Street Lighting

The Tabet Photoelectric Control is a rugged, delayed-action relay that turns street lights on shortly after sunset and turns them off again shortly before sunrise. It provides positive assurance of having the lights go on when the foot candle level of daylight drops to a predetermined point.

A light-sensitive photocell and amplifier operate a power switching relay of high capacity and versatile design. Time delay mechanism prevents false operation that might be caused by momentary incidental light changes, such as lightning or passing car lights.

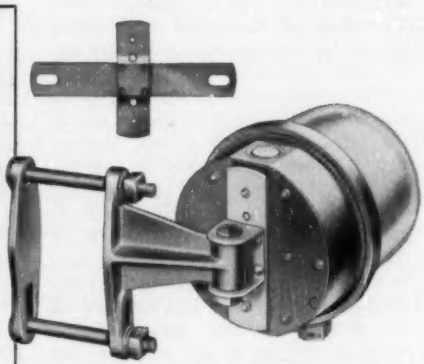
Sensitivity is variable from ½ to 6 foot candles. Standard setting turns the lights on about 20 minutes after sunset and turns them off about 20 minutes before sunrise. Operation at increasing light levels is delayed 10 seconds, and at decreasing levels 2 seconds, to prevent undesired operation.

Get Complete Information on Tabet Controls

Ask the L-M Field Engineer for details on the Tabet Photoelectric Control, or write Line Material Company, Street Lighting Div., Milwaukee 1, Wis., (a McGraw Electric Company Division).

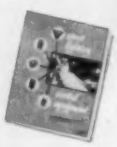
Features of Tabet Controls

- Suitable for the control of either series or multiple systems.
- Positive Fail-Safe operation; if unit should fail, lights go on, or stay on.
- Tabet Model PR Photoelectric Controls are designed to operate pilot circuits either energized in daytime or energized at night. Thus series circuits, multiple circuits, or pilot wire normally energized or normally de-energized, can be controlled with one type photoelectric unit.
- Relay contacts rated at 3000 watts, handle two 15,000 lumen lamps or equivalent, or inrush currents up to 192 amperes.
- Highest quality ceramic and paper condensers.
- Delayed action; no false operation caused by transient light changes.
- Easy installation; entire unit plugs into weatherproof watt-hour meter socket.
- Simplified procurement and stocking; one control meets all requirements.



Mounting is simple. The meter socket may be mounted directly to the pole, or may be attached to the pole or crossarm by means of an inexpensive pole band. A swivel type bracket is also available for crossarm mounting, allowing orientation of the relay with the northern sky.

162.



LINE MATERIAL

Street Lighting

A good example of modern lighting on a wide business street.

Good Street Lighting—

How to have and keep it

By E. B. KARNS, *Manager*
Street Lighting Appliance Engineering Department
Westinghouse Electric Corporation
Cleveland, Ohio

STREET LIGHTING can become as obsolete and outmoded as the hoop skirt and the horse-drawn carriage. Yet much of our street lighting in use today was installed when the horse and buggy were still common sights on the streets.

Municipal officials would not think of having horse-drawn fire engines with hand- or steam-driven pumps—because they are obsolete and inadequate, and do not protect the people and the property of the community; yet, they often keep the old street lighting.

Many of us are prone to look at an old street-lighting system as a mechanical object. You may even say: "our street lighting is as good as it was the day it was put in." That may be true, but times have changed. Streets are used more at night, and old street lighting is rarely adequate for (1) providing traffic safety; (2) curbing crime and vagrancy, and (3) promoting civic progress.

So take a second look at the street-lighting system in your town. Street lighting is cheap as compared with one serious traffic accident, one critical criminal case, or the increased business your town can enjoy.

Traffic Safety

Speed is popularly regarded as the major factor in all traffic accidents. But the modern motorist is seldom conscious of excess speed, and neither does he realize the vital relationship between speed and visibility distance.

Street lighting should provide a visibility distance at night determined by the maximum stopping distance at maximum speed allowed for that zone. The driver must be able to see far enough ahead in all kinds of weather in time to avoid a hazard. By installing adequate street lighting, the nighttime accident and fatality rates can be reduced to that experienced in the same location for daytime driving.

Planned Program

Every progressive town and city should develop a progressive street-lighting program and execute this program to a successful conclusion.

Since, in most cases, it is not possible to change an entire installation of a town at one time, it is well to map out a progressive program for a period of years. By this method the cost is gradually absorbed. Establish progressive steps as follows:

1. Make a thorough city-wide survey to determine existing lighting conditions and lighting needs.
2. Describe each street according to its use.
3. Choose a type of lighting (foot-candles) that suits the travel on each of your city's streets.
4. Establish an order of performance based on need as shown by traffic and crime statistics.
5. Establish standards for equipment and methods of installation that insure uniformity of equipment with minimum maintenance expense.

Basic planning, as outlined above, enables you at all times to explain to your constituents why certain sections are being modernized at a particular time.

Preparing a Plan

Determine present conditions

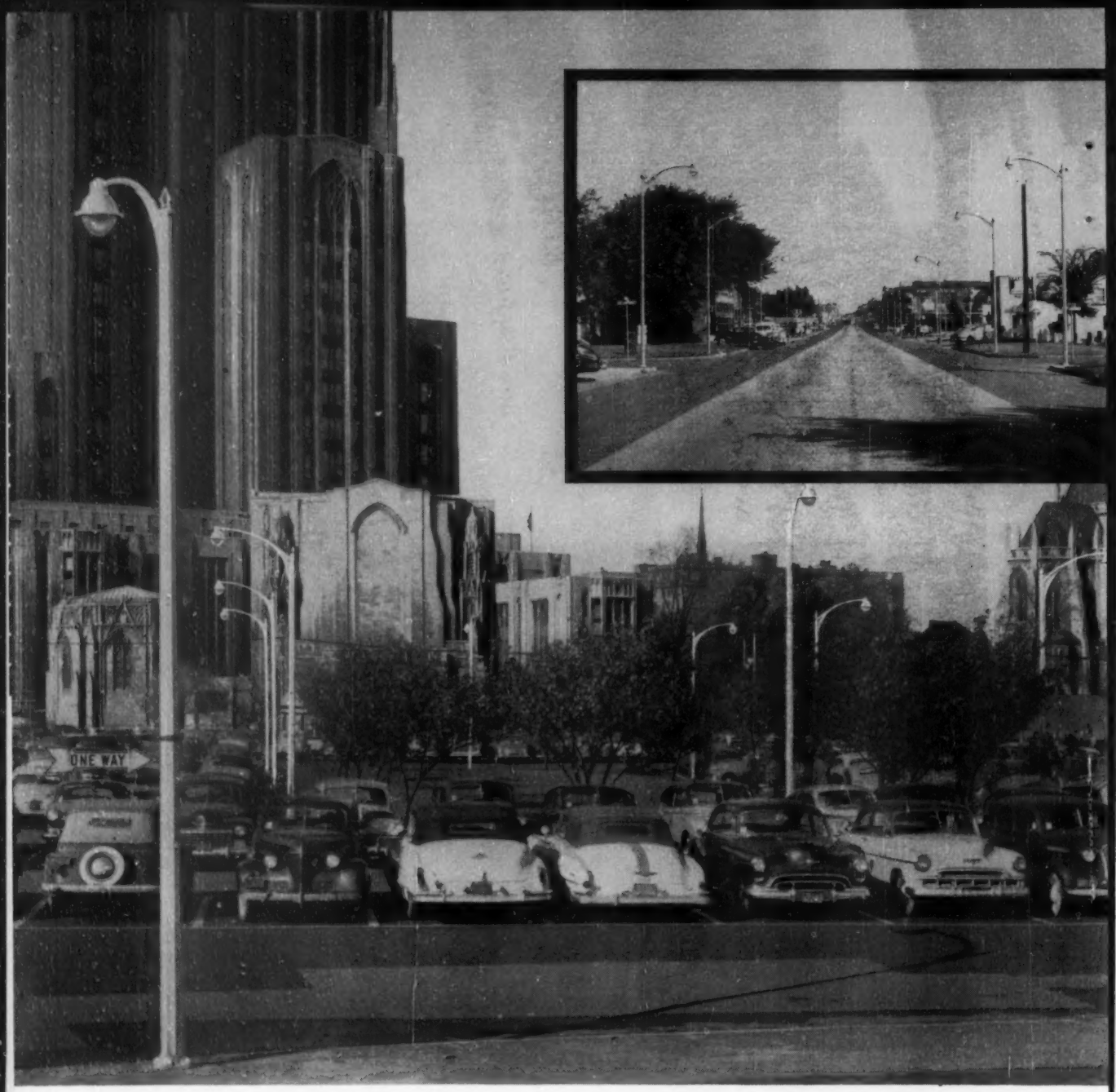
To make a complete survey of each street: first, prepare a large map of the entire city.*

1. Review police records and plot on the map, locations of all accidents. Use separate symbols for night and day accidents.*
2. Review police records and plot on the map all crime areas using separate symbols for night and day.

Classify each street

Classify each street according to

* For a graphic picture of this work performed, see the two illustrations in the editorial section of the *Municipal Index* 1954. Here are two maps made by the City of Buffalo, N. Y. One spots the locations of traffic fatalities for a long period of years. The other portrays the city's 6-part street-lighting program.



IN PITTSBURG, KANSAS, OR PITTSBURGH, PA. . . . The spelling may be different, but, big city or little city, the advantages of Monotube poles are the same —exactly the *right* designs for the requirements involved . . . for maximum lighting efficiency . . . for pleasing harmony with the surroundings.

When you specify Monotubes, you'll benefit by unmatched experience in pole engineering, design and construction. Get *all* the facts. For complete-line catalogs with pertinent data . . . for helpful planning service if you wish . . . write to The Union Metal Manufacturing Co., Canton 5, Ohio.

UNION METAL

Monotube Lighting Poles

its principal use. Code this on map as follows:

Classification	*Color Code*
A—Business streets	
1. Primary	Red
2. Secondary	Purple
3. Minor	Pink
B—Traffic thoroughfares	
1. Heavy, over 1,200 cars per hour maximum (in both directions)	Blue
2. Medium, 500 to 1,200 cars per hour maximum (in both directions)	Green
3. Light, up to 500 cars per hour maximum (in both directions)	Light green
C—Residential streets	Not colored
D—Dangerous intersections	Yellow
E—Freeways — express roads and special areas	According to traffic classication "B"

Establish Lighting Needs

Establish lighting needs for each street based on American Standards Association standards.†

The lowest value at any point on the roadway should not be less than one-tenth of the above value for roadways carrying very light vehicular and pedestrian traffic and not less than one-fourth of the above values for all other highways.

Establish an order of preference based on need

By referring to findings under Step 1 and the Summary Sheet 1—a preference can be set up and an actual work program laid out. Take the locations that have been the most dangerous, from an accident and crime standpoint, and schedule them first for modernization of lighting.

†A copy of "American Standard Practice for Street and Highway Lighting" can be obtained for 50 cents from American Standards Association, 1860 Broadway, New York 23, N. Y.

Table I—Recommended Maintained Average Horizontal Foot-candles

Pedestrian traffic	Very Light (under 150)	Light (150–500)	Medium (500–1,200)	Heavy to Heaviest (1,200 up)
For Pavements Having Reflectance of the Order of 3%				
Heavy	0.9	1.2	1.5	1.8
Medium	0.6	0.9	1.2	1.5
Light	0.3	0.6	0.9	1.2
For Pavements Having Reflectance of the Order of 10%				
Heavy	0.6	0.8	1.0	1.2
Medium	0.4	0.6	0.8	1.0
Light	0.2	0.4	0.6	0.8
For Pavements Having Reflectance of the Order of 20%				
Heavy	0.5	0.6	0.8	1.0
Medium	0.3	0.5	0.6	0.8
Light	0.2	0.4	0.5	0.6

Table II—Recommended Minimum Mounting Height in Feet for Luminaires

(Light Distribution Types)

Lamp Size Lumens	*Type I*	*Type II*	*Type III*	*Type IV and V*
2,500	25	20*	20*	20*
4,000	25	25	25	25
6,000	25	25	25	25
10,000–11,250	30	25–30**	25–30**	25
15,000	..	30	25–30**	25–30**
20,000–25,000	..	30	30	30

* Preferably higher.

** The lower mounting heights are permissible only where the contrasts in brightness between the luminaire and the surroundings are low.

Selection of Equipment

The American Standards Association standards also provide (on page 23) various lateral spreads or distribution of light from the luminaire for various street widths. The proper distribution type should then be selected according to street width.

Making the Layout

Maps of the street or streets, according to their use classification, should be drawn up.

Select from Table 1 the foot-candle values required for the class of street being laid out.

SUMMARY SHEET NO. 1

SHOWING PRESENT CONDITIONS AND REQUIRED ILLUMINATION

Name of Street and Classification	Lamp Size	Street Width	Present Installation			Minimum Recommended F.C.
			Spacing	Mtg. Ht.	Avg. F. C.	

Selecting a Light Source

The selection of a light source should be based primarily on economy. But the cost should be on an annual basis and made up of the amortization of equipment, maintenance cost, and energy cost. Usually the larger the light source or lamp the more economical the system.

A definite answer can only be given for a specific problem in a specific locality. The average annual cost per capita for good street light-

(*Continued on page* 143)

BUSY INTERSECTIONS are safer for pedestrians and drivers now that the new street lighting has been installed. Indianapolis gave high priority in its street lighting program to areas where accident records indicated the need for lighting was greatest. The hazard to pedestrians crossing streets was also greatly reduced by the new street lighting installations in the critical areas of the city.

NEW STREET LIGHTING CUTS NIGHT

BEFORE

AFTER

LIGHTING PLAN to reduce night accidents in Indianapolis was a cooperative venture by Mayor Clark, right, Police Captain Jacobs, and electric utility's H. T. Pritchard and J. D. Blythe, standing.

DANGER SPOTS needing better street lighting are pointed out by Mayor Clark to H. T. Pritchard, President of Indianapolis Power & Light Company. Pins represent traffic accidents and fatalities.

SUBURBAN HIGHWAYS were among the areas first relighted in Indianapolis. New street lighting has helped cut traffic accident rates and protect pedestrians against robberies and other crimes.

FLUORESCENT LIGHTING has proved a good solution in lighting the city's railroad underpasses. The new lighting provides excellent visibility with minimum glare even at low mounting heights.

TRAFFIC DEATHS IN INDIANAPOLIS

Since the end of World War II, vehicle registration in Indianapolis, Indiana, has soared from 164,000 to 240,000. A carefully engineered relighting program for the city's streets has actually reduced the number of night traffic accidents and fatalities despite this huge increase. In 1946 there were 41 night traffic fatalities; in 1952 there were only 35.

50 MILES OF RELIGHTED STREETS since 1946 is the proud record chalked up by the city government and the Indianapolis Power & Light Company, who own and operate the lights. The Indianapolis Police Department has also played a big part in the program by keeping complete accident records and recommending which streets most need better street lighting. General Electric has supplied filament, mercury-vapor, and fluorescent luminaires for this program.

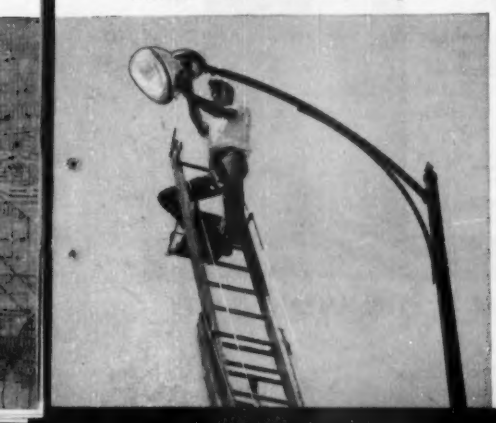
OTHER BENEFITS from the new street lighting have been the reduction in number of major crimes, and the increased effectiveness of police in detecting lesser offenses at night. On one street there were four cases of larceny or robbery in a nine-month period before relighting, while after relighting there were no such crimes during a comparable period.

G-E LIGHTING ENGINEERING is helping large and small cities everywhere to reduce their traffic accident tolls and make them safer places to live. G.E.'s broad experience is available to your electric utility to bring better lighting to your community also. For more information write *Section 452-146, General Electric Co., Schenectady 5, N. Y.*

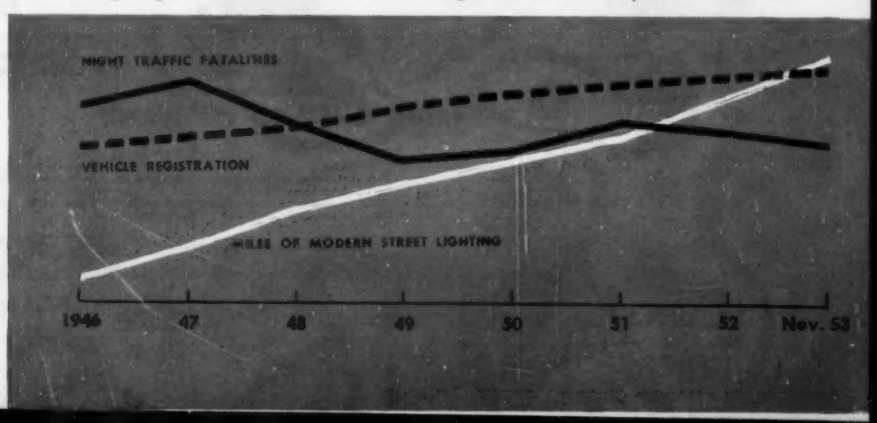
You can put your confidence in—

GENERAL ELECTRIC

NEW STREET LIGHTS were installed in high accident areas first—brought night traffic accident reductions as high as 40%.



FEWER NIGHT FATALITIES has been the real payoff of Indianapolis' long range plan. Even though vehicle registration has increased nearly 50% since the plan was started in 1946, modern street lighting has reduced the number of night traffic deaths by more than 15%.



In electrical installations *where QUALITY counts* use CONDULETS®

Quality does count in practically every electrical conduit installation that you make. When you use CONDULETS you know that you are putting in electrical equipment of the highest quality, because CONDULETS have been doubly tested . . . in the factory and in the field.

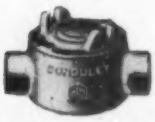
Crouse-Hinds quality control assures a long-lasting product and field records prove it by the test that only time can give. Thousands of CONDULET installations are still in tip-top condition after twenty, thirty, or even more than forty years of dependable service.

The illustration at the right shows four of Crouse-Hinds' basic quality features that are common to all CONDULETS. The fifth, Wedge Nut Fasteners, is an exclusive Crouse-Hinds feature that has made Obround CONDULETS preferred by electricians everywhere.

Type EVA Explosion-Proof Lighting Fixture

Type ARE Arktite Receptacle Equipment

Type FS Condulet With Pilot Lamp Receptacle, Switch and Plug Receptacle



Type GUAC Explosion-Proof Junction Condulet

1. **Taper tapping.** Condulet threads are taper tapped to match tapered conduit threading. Makes a rigid joint that will not loosen. This assures permanent ground continuity . . . important for safety.
2. **Integral bushing.** A smooth rounded surface protects wire insulation.
3. **Material.** Feraloy . . . a special alloy that is strong and tough, resists corrosion, and gives sharp, full threads
4. **Finish.** A triple treatment provides long-lasting protection . . . exceeds Federal and U. L. specifications.
5. **Wedge Nut cover fastener.** Clear cover opening . . . no projections. No loose parts . . . Wedge Nuts and screws self-retained. No screw holes to align.

More than 15000 items are listed in the Condulet Catalog including a complete explosion-proof and dust-tight line for use in hazardous locations.

On your next job, use CONDULETS . . . they're made right to last longer.

**CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.*

Type VC Vaportight Industrial Lighting Fixture

Type FLF Explosion-Proof Manual Motor Starting Switch Condulet

Type EPC Explosion-Proof Motor Starter and Circuit Breaker Condulet

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OFFICES: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston Indianapolis — Kansas City — Los Angles — Milwaukee — Minneapolis — New Orleans — New York — Philadelphia Pittsburgh — Portland, Ore. — San Francisco — Seattle — St. Louis — Tulsa — Washington.
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CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

ing should range from $2.50 to $4 per capita per year, depending on the density of population compared with street mileage. Perhaps the most common and equitable means of financing street lighting is out of general tax funds. Other methods are property assessments, donations, and bond issues.

Many communities are served by private electric utilities which provide the street lighting for a flat annual charge.

In the 2,000 localities which are served by municipally owned electrical systems, the city purchases, installs, and operates the street-lighting system.

In either case, the annual cost to taxpayers should be about the same.

Evaluation of Street Lighting

We are all interested in getting the most for our dollar whether our own dollar or the city's dollar is entrusted to us to use. City officials should be practically concerned about the type of a street-lighting system they are buying, the equipment going into that system, and the maintenance and operation of the system. This is true whether the equipment is being purchased, installed, and operated by private utilities or by the municipalities themselves. Examine the street lighting first for visibility, light on the roadway, and foot-candle levels of illumination. The sum of three factors gives you the annual cost: (1) the annual investment; (2) the cost of maintenance, and (3) the cost of energy.

Lowest first cost of the equipment is not always the most economical in the long run. Cheap equipment can prove expensive to maintain and operate. Top quality should insure low maintenance cost. The efficiency of the equipment itself should also be scrutinized since you are buying light on the roadway. Ask—

What is the lumen efficiency of the lamp we are using?

What percentage of its light output can be directed to the roadway when it is used with the proper optical system or luminaire?

What is its life?

Then consider the optical system of the luminaire.

Good optical performance is more than high over-all efficiency. It is good utilization. The co-efficient of utilization is the amount of the light output of the light source itself that will be directed to a given roadway by this optical system.

Optical performance alone in a luminaire is not enough. The size of the luminaire is also important. An enclosed luminaire depends entirely on radiation for cooling of the lamp, and since the performance and life of the lamp are affected by its operating temperature, then the size of the luminaire is important. Many luminaires today are too small for the lamp used with them. This results in excessive blackening of the lamp resulting in loss of light output and, in many cases, shortening the life of the lamp.

In addition to the physical size of the luminaire, you should also carefully investigate the contour of its optical system. An improper contour of the reflector can direct too much heat back through the lamp, again reducing its performance and shortening its life.

Don't overlook the mechanical construction. A lighting unit that is hard to install, and hard to service, can cost you real money in these days of high labor rates. A unit is worth several dollars more initially if it can be serviced easily.

Good specifications are of vital importance to any purchaser. If the municipality is to purchase its own equipment, then prepare good purchase specifications for your equipment.

If your street-lighting equipment is owned and operated by a private utility, then you are concerned not about equipment specifications but with the service and the type of lighting which the utility provides. Here you should have specifications on the lighting results themselves. Specify for certain classes of streets certain foot-candle levels of illumination. Specify certain degrees of uniformity of this illumination depending on the type of street. Consider the element of glare, which is detrimental to visibility, and the daylight appearance of the street. Good street-lighting equipment should enhance the street by day as well as by night.

For good daylight appearance of the streets, tall, slender, graceful poles should be used, with flowing upsweep brackets and modern streamlined luminaires.

104 Fluorescents Light Statesville, N. C.

A major portion of Statesville's business district has these fluorescent fixtures, acclaimed by the city's Mayor as "the most modern street lighting in America today."

THE LARGEST single installation of fluorescent street lights in the United States was placed in operation at Statesville, N. C., December 3, 1953. The 104 General Electric luminaires, which are each 6 feet in length, provide four and a half times as much light as the former fixtures with only half as many units. Mayor J. Garner Bagnal calls it "the most modern street lighting in America today."

Statesville's 17,000 citizens turned out en masse to watch a parade that followed the official "lighting up" ceremonies. Addresses by Mayor Bagnal and Dr. T. V. Goode, senior member of the City Council, were followed by the crowning of "Miss Merry Christmas," and a community wide street dance held under the new lights.

Mr. C. J. Hendon, commercial vice-president of the General Electric Company, congratulated the citizens of Statesville for making their city a showplace of modern street lighting. Installation was by the Statesville Electrical Department.

If parking problems have driven you to this...

a three-cent stamp is the way out

IT'S as simple as that—a letter to us will bring your parking problems, whether on-street or off-street, to the desk of a trained and experienced analyst. He will study your needs, arrange for a survey if necessary, and make his recommendations to you in the form of planned layouts based on sound engineering principles.

And if you purchase Dual Automatic Parking Meters, that same spirit of friendly service becomes a part of all your dealings with the company.

The Dual Parking Meter Company, with the industry's finest service facilities, offers factory training for city-appointed meter maintenance men. Trained and experienced company field men supervise meter installation and make periodic return visits to insure continued efficient performance.

Dual meters are available in Single and Dubl units with the same high quality, dependable mechanism used in each—one in the Single head and two in the Dubl head—and are available in all practical coin and time combinations for on-street and off-street parking use. *The Dual Parking Meter Company* (subsidiary of The Union Metal Manufacturing Company), *Canton 2, Ohio.*

Safe Crossing for Newark Pedestrians

By EDWARD L. CYR, *Traffic Engineer, Newark, N. J.*

TO TRAFFIC ENGINEERS there are two types of pedestrians: one who pays no attention to traffic lines, lights, or officers in his haste to cross the street, and one who worships the green light and ignores the driver who's out to beat the red light.

Pedestrians of a Third Type

There is talk about a third type who studies the traffic both ways before starting to cross the street on a green light, but traffic engineers have never met him.

A method that would make Market and Broad Streets, in Newark, N. J., safe for pedestrians, would make practically every intersection in the country safe for pedestrians. At this world-famous intersection 140,520 pedestrian crossings are made and 68,300 vehicles cross in 12 hours daily.

For years these two classes of traffic (including the left and right turners and red-light sprinters in the cars and the rugged individualists afoot) competed. The traffic signals were placed on trombone arms that extended over the pavement. Right and left turns from one street into the other were prohibited. This edict was posted by large signs, hung just below the traffic signals. The result was more fluid traffic and less red-light sprinting, but the pedestrians remained on their own.

"Wait" and "Walk" legends enclosed in a mounting similar to a traffic signal head were tried. The words set against an 8-inch lens were not visible from one curb to the opposite curb, for Broad Street is 100 feet wide and Market Street is 70 feet wide.

A sign bed which held a neon tubing spelling "Don't Walk" was tried. A timer and switch extinguished the "Don't" and left only "Walk.' The first weakness was the color—pink or orange instead of the peremptory red that means STOP to everyone. The second weakness was telling pedestrians to "Walk" and then "Don't Walk." It tended to confuse. The third weakness was the hazard of a failure of the word

Pedestrians in Newark, N. J., using their new traffic signals.

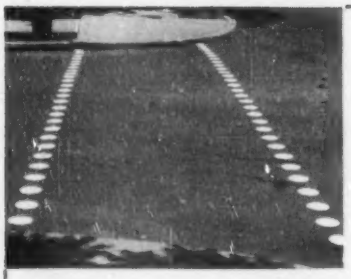
TAKE THE BITE OUT OF MARKING COST!

with

PRISMO

MUNICIPAL *Life Line*

Don't let high costs of marking materials keep increased safety from *your* streets! Take the bite out of these costs by using Prismo's Municipal LifeLine. This economical and highly durable marking material was developed by Prismo Laboratories specifically for marking city streets. Applied quickly, it dries quickly . . . reduces traffic tie-ups to an absolute minimum. Initial low cost of Municipal LifeLine plus lasting durability means tremendous saving in labor and material . . . means real economy for your city's marking program. Municipal LifeLine is the answer to municipal marking problems because it is the one reflective striping material that meets all municipal requirements. Write today for full details.



APPLIED IN MINUTES . . . LASTS FOR YEARS!

PRISMO PLASTIX

Eliminate long and frequent traffic tie-ups with long-wearing . . . easy to apply Plastix—the modern way of applying safety to streets and highways. Prismo Plastix is an extruded plastic thoroughly impregnated with Prismo optical glass spheres. The high reflectivity of Plastix plus its economy and speedy application makes it ideal for highways, streets, parking lots, factory floors, etc. Write today for booklet PX-53.

PRISMO SAFETY CORPORATION

THE SPHERE of SAFETY

530 HUNTINGDON • PENNSYLVANIA

"Don't" leaving "Walk" to carry on despite the changes of the traffic-signal lights. This could be disastrous.

Early in 1953 a new type of pedestrian "WAIT–WALK" signal was demonstrated by Atlas Products Inc., of Montclair, N. J., for our Traffic Engineering Department. Criticism was invited, and our numerous suggestions were incorporated in the signal. Rigorous tests proved the rugged continuity of the signal, the life of the special tubes in it, and the effect of various weathers.

"WAIT" is in 6-inch red letters, illuminated by three red gaseous tubes which constantly scintillate without aid of an electric flasher. The animation of these letters arrests the attention of the pedestrian.

Signals in Action

When vehicular traffic is brought to a stop, this pedestrian signal, which acts in conjunction with the timing device of the traffic lights, changes from "WAIT" to "WALK." Three deep-green, steady-burning, nonscintillating tubes illuminate this word. The height of these letters is a trifle less than those of "WAIT." The scintillating red "WAIT" and the steady green "WALK" appear to be clear and unmistakable. They are natural directives.

Eight of these signals have been permanently erected at the Broad and Market Street intersection. There are two on each corner, one for each direction of pedestrian traffic. The words "WAIT" and "WALK" are clearly readable from the opposite sides of these thoroughfares. They were erected immediately after Thanksgiving of last year in order to be prepared for the increased crowds of Christmas shoppers. The eve of this holiday was an acid test. To the gratification of the Traffic Engineering Department and the Police, the signals moved crowds of pedestrians across the streets safely and in order.

To establish without delay the presence, purpose, and importance of the new signals, painted signs, 18 inches by 24 inches, were placed on corner stanchions and read: "Pedestrians, Please WAIT for WALK Signal. Police Department of Newark." The WAIT and WALK were painted red and green, respectively.

Public Reaction

Public reaction was positive and favorable. Citizens, service clubs, and trade associations requested that the signals be used at other intersections. Just recently, a delegation from the Parent-Teachers Association of the city waited upon Commissioner John B. Keenan, Newark's Director of Public Safety, and asked that the signals be placed at school intersections. When Dr. Miller McClintock, the Dean of Traffic Engineers, observed these signals in operation his comment was: "The greatest contribution to pedestrian safety that I have yet seen."

New York's New Signal Post

By LAWRENCE LAWTON
Director of Traffic Planning
Department of Traffic

ADJUSTABLE traffic signals and WALK—DON'T WALK pedestrian signals feature the New York City signal-improvement program. They render the existing cast-iron tie-rod posts obsolete.

The old-style signal post consists of a series of nesting castings held together by two sets of tie rods which corrode to an astounding degree. Weighing 232 pounds, the old post is composed of 42 parts, and in order to meet shipping requirements, each part had to be packed in a separate crate. When it was necessary to erect posts in the field, the parts had to be taken out of the different crates and assembled. The whole procedure was costly in terms of both shop and installation labor.

It was decided to design an entirely new post—a single unit requiring no assembly, light enough to be handled by one man without the use of hoisting equipment, and retaining the silhouette of the old post.

Simplified Design

Considerable thought was given to this design problem and the use of aluminum was decided upon. With aluminum it is possible to have light weight combined with high strength. It can be inexpensively tapered in one operation without the use of a longitudinal weld. On the Dewey tapering machine the top 4½ inches could be made with a constant diameter for a good, snug fit of the slip fitter. And with aluminum a low-cost precision casting is possible by using a mass-production permanent mold. Also, a number of tough aluminum alloys with high shock-resistance are available.

The conventional way to anchor the new post would be to weld angles to the inside vertical surface of the base casting. This method would not be practical for maintenance replacement of existing posts.

In the last 20 years all anchor rods have been installed 120 degrees apart on a 10-inch bolt circle. Sometimes the mechanics were not too careful in the exact placing of the anchor bolts. They knew that by bending the tie rods the post would be attached to any anchor bolt located within the foundation. A way had to be found to provide the same flexibility without the use of tie rods.

The solution is shown in the drawing on page 150. Note the integrally cast lip on the bottom of the base casting (at right). A galvanized steel anchor clip fits on the top of this lip and holds the post tightly against the foundation. In this manner the post is securely anchored without dependence on the exact placement of the anchor rods.

The shaft is made of tapered 3/16-inch 63 ST-6 alloy tubing. The base has a minimum thickness of ⅜ inch and is cast of No. 43 alloy. The door is fastened with a socket head stainless-steel screw. The socket head seats in a dimple on the door so that only an Allen Key wrench can be used to open the door. This scheme eliminates vandalism by youngsters who, 'n the past have used knives,

(*Continued on page* 150)

New York's new aluminum signal posts are light in weight and simple in design.

"G-E DOES THE JOB...
better... faster... cheaper!"

▲ **DRIVER, J. C. SMITH,** reports completion of emergency call involving a faulty hydrant. During 1953, G-E radio paid for itself easily by expediting repair of two major breaks on 42-inch line.

◀ **IN AN EMERGENCY,** General Electric *Electronic* Tone signalling activates base station alarm bells. Maintenance shop dispatcher Lipscomb can then re-route a service crew immediately.

● The Greenville, S. C. Water Works investment in a General Electric 2-way radio system has really paid off. Formerly, two main reservoirs were completely isolated, communications-wise. Reports had to be delivered *by hand* . . . breakdowns or equipment malfunctions were difficult to control. Today, radio coordinates all phases of water purification, transmission, distribution, pipeline construction and maintenance. And, routine servicing of the radio equipment is all that has been required even after 14 months operation.

For communications that will serve you best with outstanding performance . . . long-life . . . and low maintenance features *examine G-E first.* Call our Communications Counselor at the local office, or write: *General Electric Company, Section X1034, Electronics Park, Syracuse, N. Y.*

2-WAY MOBILE RADIO

GENERAL ELECTRIC

Beauty is as beauty does—

USS NATIONAL Tubular Steel Poles are slender, graceful, modern—a visual asset to any community. But their real beauty is in their practical function.

Because they are slender, yet strong, NATIONAL Steel Poles are not visual obstructions—create no traffic hazards. Because of their great strength they easily support the tightest trolley or trolley bus lines, and need not be spaced as close together as bulky, old-fashioned standards. As lighting poles, they are unexcelled.

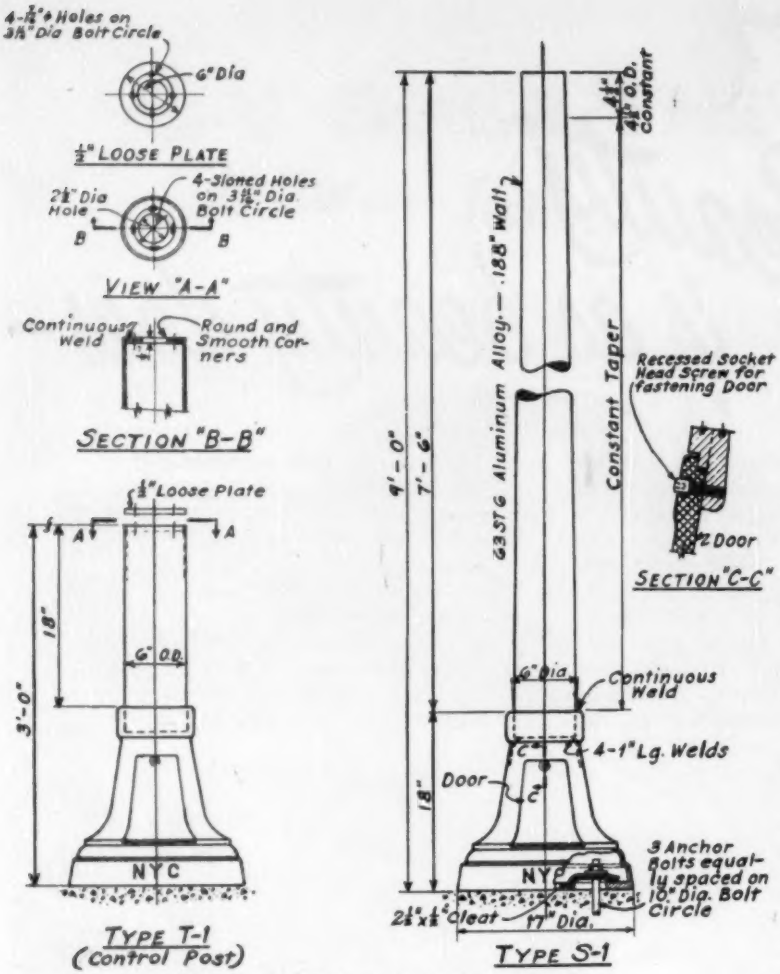
Steel poles require very little maintenance—an occasional coat of paint keeps them like new. Smart looking NATIONAL Tubular Steel Poles are smart business. They serve the community practically, esthetically, and economically.

For further information, write for Bulletin Number 14 to National Tube Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION
PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS NATIONAL *Tubular* STEEL POLES

UNITED STATES STEEL



Design of New York City's aluminum signal post.

screw drivers, and coins to loosen round-head door screws.

The Department of Traffic has adopted a policy of mounting all controller cabinets on separate control pedestals. The conventional way would be to use a 4½-inch slip fitter attached to the controller cabinet. Since there is a 6-inch opening in the top of a base casting, the use of the slip fitter would have resulted in an extreme and unsightly taper on the short length of shaft. It was, therefore, decided to use straight 6-inch tubing.

New and Old Compared

As shown in the drawing, a ½-inch plate, with a 2½-inch opening, is welded to the top of the post. Four 7/16-inch slots are cast in the plate and four 7/16-inch holes are drilled in the bottom of the controller housing. Using an additional loose plate as a giant washer, the cabinet is attached with four ⅜-inch stainless-steel carriage bolts.

The head of the bolt is inserted in the bottom of the welded plate and the square shank of the carriage bolt fits into the 3/16-inch groove so that the bolt cannot turn while the nut is being tightened inside the controller housing. This setup results in a universal mounting device which is inexpensive and vandalproof. With this arrangement any size controller housing can be attached to any design of control pedestal with a minimum of field labor time.

In some of the old foundations, conduit elbows are located so that it is necessary to remove a small segment of the lip to install a new post. The alteration to the new post can be easily accomplished. Two radial cuts are made in the lip with a hacksaw, then a line is chiseled on the bottom edge of the lip about half an inch from the outside edge. A few blows with a hammer suffices to produce a rectangular opening in the lip. The whole operation takes seven minutes.

In October 1952 the Department of Traffic prepared a detailed set of plans and specifications for the new posts. Bids were submitted by the three principal manufacturers of aluminum lighting standards. A contract was awarded to the low bidder, Pfaff & Kendall, Inc., of Newark, N. J. Following is a comparison of the old and new posts:

Item	*Old Post*	*New Post*	*Difference*
Height, feet	8	9	Ft. higher
Weight, lbs.	232	60	172
Initial cost	$73.91	$48.80	$25.11
Erection labor ...	14.86	10.13	4.73
Shop labor	6.00	1.00	5.00
Total savings per post			$34.84

As New York uses over 1,300 posts per year, an annual saving in excess of $45,000 will be obtained. Additional saving, due to lower maintenance cost over the years, is also anticipated.

Short-Time Parking Only In the Business District

COMMENTING on growing proposals for removing long-time parking from business districts and serving the long-timers by public transit, the *Philadelphia Bulletin* said recently: "If this should happen to be the best answer, many communities are wasting a lot of money on increased parking facilities."

All the towns and cities in the country would do well to take note. When commuter-parking facilities are built in the heart of the business district, do the authorities — municipal, civic, and business — know what they are doing?

The editorial continues:

"Off-street parking (in the business district) invites more and more cars into the city. It takes them off the streets during parking hours, but creates still worse jams when the cars are not parked."

Traffic authorities and consulting engineers are invited to knock that one down. If they don't at least take a swing at it, why the feverish search for ever-more unrestricted off-street parking space in the high-value district?

Another way was suggested in the 1953 *Municipal Index* and in THE AMERICAN CITY for April 1953. The plan will be discussed for small as well as large cities in the 1954 *Municipal Index*.

New Low Priced M-B LINE STRIPER for Regular or Reflective Painting

RUNS CIRCLES AROUND ANY MARKER IN ITS CLASS

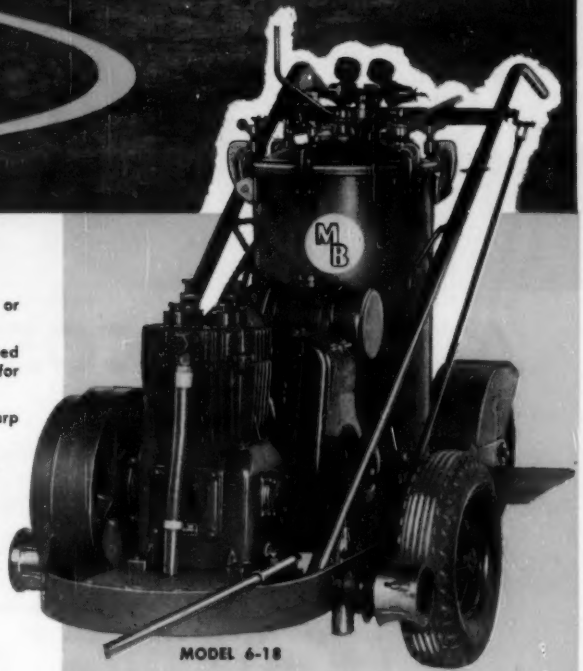
A LOW PRICED MARKER WITH FEATURES NO OTHER PROVIDES

1. Built-in riding trailer with foot brake.
2. Easily steered in circles, curves or straight lines.
3. Paints regular or reflective line.
4. May be equipped for solid or intermittent line.
5. Spray gun can be mounted *outside* of wheel tread for close work.
6. M-B Jet Nozzle assures sharp lines, no drip marks.

Now *EVERY* city can afford to mark their own traffic lines, for the new M-B Model 6-18 performs all the functions of the high priced markers at a sensationally low price. The Model 6-18 will handle *all* your jobs, including reflective painting . . . and *more* jobs than many markers priced considerably higher.

It's a ruggedly built unit, with a 6 HP engine, and ample paint capacity in its 18 gallon, A.S.M.E. approved tank. Travel speeds range from 3 to 5 miles per hour. It is the first and only ride-on type marker engineered as a unit. It steers and handles with unbelievable ease, even in congested areas.

No community can afford to be without one, and larger cities can now afford fleets to service individual areas. Send the adjacent coupon for prices and complete details.



MODEL 6-18

SEND FOR COMPLETE DETAILS

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New Holstein, Wis.

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☐ Prices ☐ Literature

Name .....

Title .....

Address .....

City ..... State .....

Employed By .....

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NEW HOLSTEIN, WIS.
HIGHWAY MARKERS · SWEEPERS
TRAILERS · PAINTS · REFLECTIVE BEADS

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DRIVE-INS

BETTER LIGHTING everywhere

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PARKING AREAS

RECREATION AREAS

AT LOWER COST to everybody

Pfaff & Kendall, originator of the Seamless Tapered Aluminum Lighting Standard and Tapered Elliptical Arm, is now producing designs and types to meet any highway, road, area, bridge and traffic signal requirement.

Wherever P & K All-Aluminum Standards and Brackets are specified and installed, the story is the same: *Fewer technical problems . . . rapid, easy installation . . . greater lighting efficiency . . . and the kind of economy you can figure in actual dollars!*

P & K All-Aluminum Standards and Brackets are always the wisest choice . . .

LIGHT WEIGHT for lowest cost installation.
NEGLIGIBLE CORROSION for longest service.
NO PAINTING means large, year-after-year savings.
SALVAGEABLE, RE-USABLE in event of knockdown.

WRITE FOR LATEST P & K CATALOG... and use the P & K planning and advisory services without obligation.

Pfaff & Kendall
84 Foundry Street
Newark 5, New Jersey

(*Continued from page* 115)

has supplied THE AMERICAN CITY with the following summary of recent municipal achievements:

Capital Improvements

Twenty-two miles of major streets resurfaced; parking ramp built. State-local bond issue for expressway approved; street tree-planting program begun.

School-park construction program: Fuller Community Play Area; Playgrounds re-equipped. Zoo, picnic areas, baseball diamonds.

Secondary sewage-treatment plant started; sewer-replacement program begun.

Ranney System collector wells along Grand River aquifer contracted for, eliminating super-costly water-expansion program of former administration.

First neighborhood redesign and buffer park strip for protection from industry and traffic.

Service Improvements

Traffic: accidents and accident-insurance rates reduced; one-way streets, channeling, better traffic lighting.

Improved police and fire protection: cruising ambulances.

Gambling and vice reduced. Expanded fire inspection and prevention activities. Two-way radio.

Extended recreation season.

Health education on cancer, heart, accidents, infant care. Meat, milk inspection, and smoke-control ordinances.

Administrative Improvements

Finance: Complete reassessment, earning 1953 National Association of Assessing Officers' award. Investing cash in interest-bearing notes. Revolving fund to speed special improvements. Accounting showing charges when incurred.

Personnel: First official compensation plan. First technically prepared rules.

Planning: Zoning ordinance. School-parks. Neighborhood conservation. Major street plan; expressway. Parking programs. Urban service policy: agreement with townships for city water, sewage and fire-protection services in return for proper zoning.

Most achievements were due to more efficient administration and better use of personnel, since wage increase about offset revenue increase.

Greenwich, Connecticut

CONNECTICUT is the only state without a primary system. The methods by which candidates for local party and public offices are selected is determined, with few exceptions, by the political organization.

In Greenwich, as in many other communities, both the Democratic and the Republican Town Committees were in complete control of party affairs through a very restrictive caucus procedure which made it very impractical for petitioners to attempt to present candidates in opposition to organization slates. Only the Town Committees could change their Rules. And these Town Committees had, through presenting themselves without opposition, perpetuated themselves in power for many years.

In 1949, the Greenwich League of Women Voters and the Greenwich Legislative Council supported a bill which would have required the Town Committees of all parties to liberalize their Rules to give members a more adequate opportunity to participate in the selection of candidates. Because of the opposition of local political leaders, in control of the Town Committee of the dominant party, the bill was killed in committee.

A change in local Republican Party leadership was a prerequisite for reform. A "Republican Citizens Committee" of about 400, with the knowledge that the incumbent members of the Town Committee would again rename themselves as candidates, selected a full slate of petition candidates well in advance of the caucus date.

These candidates were pledged to secure the enactment of a direct primary law for Greenwich, to liberalize the rules governing participation in party affairs, and to eliminate patronage as an influence in the selection of candidates.

The objective of the Citizens Committee to secure the enactment of a direct primary law was endorsed by the Town Republican Club, the League of Women Voters, the Greenwich Legislative Council, the Representative Town Meeting, and other groups.

Thirty-four of the 37 Citizens Committee candidates were elected. A law providing for the selection of all candidates for public office in Greenwich through direct primary, drafted and supported by the reform Republican Town Committee, was enacted at the 1953 session of the State Legislature. Richard S. Childs, eminent authority on municipal government, declared that it gave Greenwich the "best primary procedure in the United States."

The Rules of the Republican Town Committee were amended so that its members are now elected by district, with ample opportunity for party members to present candidates in opposition to the regular Town Committee selected slate.

The Town Committee is now engaged in a continuing effort to have legislation enacted to change an archaic system in which estate-appraisal fees consitute an important source of patronage.

MARK STANLEY MATTHEWS
Attorney at Law

Hamilton, Ohio

CITIZEN ACTION in Hamilton is not dramatic. Realizing that Hamilton has problems, the residents are quietly and systematically doing something about solving them.

Twice defeated at the polls, a $4,750,000 school-bond issue was passed two to one at the November 1952 election. This resulted from the formation of a hard-hitting citizen committee which, with the cooperation of civic clubs throughout the city, conducted a campaign to acquaint the citizens with the dire need for additional school funds.

A street-bond issue, to finance a long-range program of repair and construction, was presented at the same election and also passed. Although this issue could well have been defeated by an uninformed and keenly tax-

(*Continued on page* 157)

NEW OLIVER 88WT Hydro-Trencher

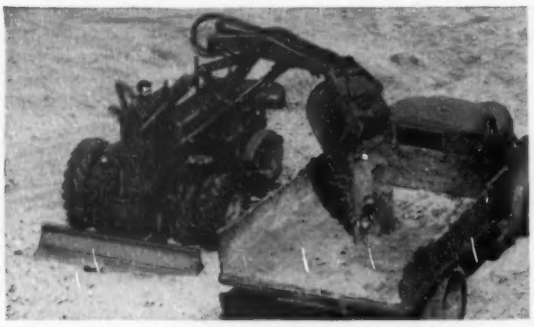
Digs to 10 feet in toughest going!

Here is a trencher that won't stop when it comes to rocks or roots. Tremendous hydraulic down pressure forces the half-yard bucket into the ground for a fast, full load. New dual-circuit control gives constant pressure, more positive control and greater flexibility in any kind of going.

Take a close look at this new trencher. It reaches long and digs deep. Its simple, sturdy construction and all-hydraulic operation give low maintenance and long service. The hydraulic stabilizer blade not only holds the tractor level and steady, but is an excellent back-filler blade. And, by simply turning the trencher bucket around you have an efficient swing loader.

Test the new Oliver 88WT Hydro-Trencher on your work. See how easy it is to operate and how readily it digs or loads the toughest material. And remember, the 88WT is ready to work or move instantly, and takes only one man to operate. Get in touch with your Oliver Industrial Distributor for a demonstration, soon!

Right through the roadbed! Powerful hydraulic down pressure digs through this material with ease. Positive dual-circuit control gives a choice of *three* separate lift or drop speeds on the boom for any condition. Bucket rotation and dipper stick design permit clamping rocks larger than the bucket itself. Special boom cylinder available for digging to 12 feet.



It's a swing loader, too! Remove the bucket hinge pin and turn the bucket around. In minutes the trencher becomes a loader. No extra parts are needed. The exceptional bucket rotation permits loading into a truck up to 10 feet, 6 inches. Optional loading bucket loads up to 12 feet.

One-half yard bucket! The fast hydraulic operation and big bucket capacity of the 88WT let you do more in less time. All-hydraulic operation means, too, that there are no expensive cables or clutches to replace. Maintenance is simple and low cost.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

Esthetics Was the Stumbling Block

(*Continued from page* 101)

nto a small, artificial stream. The effluent had to support all the normal vegetation and aquatic life of an unpolluted local stream, including minnows. This stream section is roughly 50 feet by 50 feet and about 3 feet deep. The pond has a gravel-and-sand bottom, and the sides include natural shrubbery and other vegetation. The overflow from this artificial stream will be through flow drains to prevent fish from escaping. At normal flow, the sewage will remain in the stream for 30 hours.

After this period, the treated effluent will enter a large percolating pond which has about an acre of water surface, a 4-foot water depth, and will hold about 20 days' flow. This pond has a bottom clean-out drain, beneath 8 inches of gravel, which extends 10 feet to each side. Percolation holes, 3 feet square, penetrate to pervious soil; each is filled with gravel. With practically no organic solids or BOD in the influent, the percolation rate will exceed 50,000 gallons per day. This, therefore, has no outlet other than a storm water overflow which will probably never be used. Drainage ditches divert the surface water so that very little rain water will find its way into the pond.

We plan to supplement the usual BOD and suspended solids test of our effluent with periodic tests of underground water from a shallow well that is located 50 feet downstream from our percolation pond. Also, we intend to keep a comprehensive record of any change in the normal fish and aquatic life within the artificial stream unit. We believe that these data will furnish the most convincing proof that there has been no stream pollution.

1954 National Conference On Government Slated for Kansas City, Missouri

GEORGE H. GALLUP, president of the National Municipal League, announced the selection of Kansas City, Mo., as the site of the 60th National Conference on Government. The Conference will be held next November 7 through 10.

Dr. Gallup, who is director of the American Institute of Public Opinion, said that the League's executive committee had accepted the invitation tendered by John B. Gage, former Mayor of Kansas City and currently regional vice-president of the League, on behalf of the citizens of his own city at the Richmond, Va., Conference last November.

The National Municipal League, a citizens' organization encouraging better local government, has held the Conference annually since 1894. The 1953 Conference in Richmond attracted over 1,000 visitors, including civic and business leaders, local and state officials, educators and political scientists from all parts of the country.

Critical problems relating to American cities, counties and states were debated at 25 public sessions. Over 7,000 Richmond students participated in special conference sessions.

Kansas City was the winner of two All-America City Awards in 1950 and 1951, in recognition of its citizens' successful efforts to maintain clean, nonpartisan government and to rehabilitate areas inundated by flood waters. This contest is sponsored jointly by the National Municipal League and *Look* magazine.

Our New Baby...
Budget Priced Striper for Industry...Small Cities and Towns
REFLECTO-LINER, Jr.
It's NEW!
It's the Reflecto-Liner, Jr. and it's the budget's best buy for 1954. Unbelievably low priced, this mighty mite will give you big-machine striping performance on every job. From its mono-unit frame to the ample 9.3 cu. ft. compressor, this machine is a splendid example of Wald's carefully researched engineering. Maximum efficiency for applying either plain or reflective traffic paints is assured with the powerful 4 cycle, 2.5 horse-power engine and large 5 gallon paint supply tank. The vertical, horizontal and radial adjustments on this easily maneuvered machine offer extreme versatility and permits laying of 2"-4" lines right up to the curb.
Designed especially for Factories, Parking Lots, Airports, Small Cities and Towns, County and Township roads, the Reflecto-Liner, Jr. will do a man's sized job and can be purchased at a "petty cash" price.
Write, Wire or Phone Today for Bulletin 509.
WALD INDUSTRIES, Inc.
HUNTINGDON, PA.

1 pennies

5 nickels

10 dimes

25 *quarters

DUNCAN-AUTOMATON with its new time-saving convertibility adjustment makes changing time limits as easy as it is to loosen a screw and reset to longer or shorter periods of time. Automatically speaking, D-A puts an end forever to old-time pre-winding to make mechanism work automatically, upon insertion of a coin.

DUNCAN-MILLER manual meter digests dimes and quarters* along with nickels, easier than other makes take pennies and nickels . . . for D-M is the original meter made to register dimes in combination with nickels and pennies. For the job of adequately metering curb or parking lot, why don't you write us today for more details on the products of America's largest manufacturer of parking meters.

*quarters

Quarters usually reserved for multiple hour parking lot meter.

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PARKING METER CORP.
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Factory at Harrison, Arkansas
Manufacturers of the DUNCAN-AUTOMATON fully automatic and the DUNCAN-MILLER manual parking meters.

conscious electorate, a pre-election informational campaign by a citizen group resulted in its success.

The Hamilton Traffic Committee is constantly working toward the alleviation of traffic problems. A one-way street pattern, pedestrian walk lights, intersection channelization, and "jay walking" campaigns have met with widespread acceptance.

The Building Code Committee has been revising the city code, sentence by sentence, although the work is hard and the glory, nil. Better construction at less cost is worth their efforts.

The annexation of outlying fringe areas is a major issue in many cities today, and Hamilton is no exception. The Greater Hamilton Area Committee has only recently been organized, but already it has accomplished much in the way of favorable public reaction. It has a double job—informing the residents of our present city concerning the proposed annexation, and informing the residents of the proposed areas of the advantages of becoming annexed.

The committee is presenting the case well. A brochure, explaining every phase of the situation has been prepared and mailed to each householder in the proposed areas, to be followed by a personal interview.

Since the proposed annexation would almost triple the present area of the city, it can well be understood that the task warrants careful and detailed planning. That planning is under way at the present time and, from all indications, the goal is assured.

If success can be predicted by one single factor, I should say it would be the absolute honesty of the Committee in presenting the matter. The disadvantages as well as the advantages of annexation are being presented, with the belief that informed citizens will make a wise decision.

The Sertoma Club has conducted a "Plug Horse Derby" for the benefit of its crippled children's charity fund. A schedule of races run by actual farm plugs, the Derby has caught the fancy of the entire city and has resulted not only in raising funds for a proposed children's hospital, but also in making the citizens really charity conscious.

HAROLD B. FRYE
Lieutenant Governor
Sertoma Club

Lawrence, Massachusetts

BEFORE SPELLING OUT recent achievements in Lawrence, I should like to point out that Lawrence is an old city. In addition it was completely oriented to the woolen-worsted textile industry ever since it was founded, and suffered severe losses of job opportunities in the period from 1949 to 1951. These losses were due to liquidation of excess capacity in the woolen-worsted industry. The community achievements might be stated as having been the result of this economic change, for the search for new industry has brought recognition of the fact that the community had to improve itself in order to be attractive to new industry.

Among its accomplishments have been:

1. The organization of the Greater Lawrence Citizens' Committee for Industrial Development, dedicated to creating new job opportunities.

2. The organization of the Lawrence Industrial Associates, a private group of citizens who have raised $125,000 for the promotion of the economic welfare of the community.

3. The formation of the Atlantic Enterprises Corporation, another group of private citizens who have redeveloped vacant textile-mill properties for the purpose of attracting new companies.

4. The organization of a citizen Board of Trustees of the city-financed hospital, who have, since their establishment, improved the service of the establishment and, at the same time, reduced expenses by 45%.

5. Reorganization of the Lawrence Planning Board which, under new authorization and under the direction of unpaid citizen members, has embarked on the development of a master plan for the city.

6. The engaging of an engineering firm to conduct an organizational and administrative survey of the city and to work with citizen advisory groups in those matters where recommendations for action are made.

When one considers that a year ago Lawrence was highly publicized as the number one "distressed area" in the United States under a technique employed by the Bureau of Employment Security, the significance of some of the steps which have been taken becomes more apparent. Whereas, once Lawrence might have sat back and expected some outside agency to come and bail it out, it has now concluded that its progress will be dependent upon its own efforts, and that there is no substitute for local knowledge of local resources, and local determination to make the fullest possible use of them. Our industrial success in less than two years of vigorous effort has resulted in over 30 new companies coming into the area, and these have created over 4,000 new job opportunities.

ROBERT H. RYAN
Executive Director, Greater Lawrence Citizens Committee for Industrial Development

Norwich, Connecticut

IN JULY OF 1951 there existed a City of Norwich, Conn., surrounded by and included in a Town of Norwich. There was a city tax and a town tax, which city residents paid also. There was a duplication of many functions and of most administrative offices. The old city charter divided administration between an elected council, a mayor, 6 council committees, and 15 separate boards and commissions.

A Citizens Committee for Better Norwich Government, formed in 1947 and representing all variations of citizens, had spent two years in studying the problem and drafting a new charter. This charter provided for the consolidation of the city and town and concentration of authority in a city manager. This proposed charter was presented to the State Legislature in 1949 for approval in accordance with state statutes before any referendum could be held. It was at this point that the politicians got their first crack at the matter—and the opposition, led by Norwich's own Senator, prevented local citizens from even voting on the measure.

In spite of this, the committee redoubled its effort and filed with the 1951 legislature a petition containing 4,000 signatures of citizens of Norwich who wished to vote on this matter. As a result, legislative approval was given in 1951 for the local referendum. The Citizens Committee carried out a tremendous community

Here's why an AUSTIN-WESTERN power grader gives you 30% more power at the blade and twice the maneuverability

Much of the time, All-Wheel Drive and All-Wheel Steer work as a team to provide CONTROLLED TRACTION. In this position, the rear drivers push behind the toe of the blade; the front drivers pull ahead of the heel of the blade, and the machine moves straight ahead with a load on its blade that would cause the ordinary grader to become unmanageable.

On the ordinary front steer, rear drive motor grader, the front end is just that much dead weight which the rear end has to push around. *Total* weight is not the measure of motor grader operating efficiency. What counts is the useful working weight carried on driving wheels; all other weight consumes power, and is a definite handicap.

On the Austin-Western Power Grader, there are no idling front wheels . . . no dead front end to consume power and decrease operating efficiency. All weight is on driving wheels—front and rear—contributing 100 percent to traction. Dynamometer tests, conducted with the greatest accuracy, have proved conclusively that with two graders of the same weight and horsepower, working in first or second gear where real earthmoving is done, an all-wheel drive machine has 30 percent more power-at-the-blade than one with rear drive only.

With its ability to steer both ends of the machine in the same direction or opposite directions, the Austin-Western Power Grader has twice the maneuverability of other graders; works around short-radius curves impossible for machines with front steer only; turns easily on narrow roads and trails, and maneuvers more closely around culverts, bridges and other obstructions.

Spring and Summer, Fall and Winter, the A-W Power Grader outperforms all other motor graders . . . on all types of work, and under all conditions.

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Power Graders • Motor Sweepers

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education campaign before the referendum and the measure was voted favorably in July 1951. The Committee then continued to endorse and elect, with the exception of one candidate, Norwich's nonpartisan council. In December of that year the first city manager was chosen.

The achievements in the first two years of consolidated, council-manager government are notable. The city ended the old fiscal years under the old budget with a surplus of $104,000. A budget surplus of $124,000 occurred at the end of the first council-manager fiscal year. Capital improvements and capital expenditures, new off-street parking lots, and the remodeling of City Hall were financed on a pay-as-you-go basis. Professional planning and zoning and traffic regulation were effected. A sanitary-landfill method of garbage disposal was initiated—just to mention a few of the improvements.

The Citizens Committee has continued to be active. In the 1953 Legislature it worked to defeat an attempt to restore party labels in municipal elections; and in the municipal elections of 1953 it again successfully supported its endorsed candidates through the primaries and elected all but two of the City Council.

Today, the membership of the Committee numbers almost 300 and there is a changing set of directors and officers. In 1954 various subcommittees of this citizens' group will be active in all matters affecting our local government.

BERNARD L. SAVAGE
President
Norwich Chamber of Commerce

Pittsburgh, Pa.

THERE IS NO GREATER SPUR to community progress than the completion and opening for public use of projects which have been under way for some time.

Recently, in Pittsburgh, a number of major projects in our community-development program have been dedicated and placed in use, with a heartening and encouraging effect on citizens and civic leaders alike. It has renewed faith and confidence in the over-all program, inspired the community with new pride and enthusiasm, and fired it with greater determination to go forward.

An eight-mile section of the district's first limited-access highway — the Penn-Lincoln Parkway — was opened to traffic this past summer. Being built by the Pennsylvania Highway Department to carry routes Nos. 22 and 30 into and through Pittsburgh, this highway will afford direct access to the Pennsylvania Turnpike and is to include a set of twin tunnels through Squirrel Hill—one of the city's most densely populated residential areas.

In September a nine-mile section of the Penn-Lincoln Parkway West was also dedicated. It provides a direct connection with the Greater Pittsburgh Airport and brings the airport within 20 minutes of downtown Pittsburgh.

Conemaugh Dam, one of eight major flood-control reservoirs, was officially placed in full use last fall. These eight dams not only safeguard the whole Upper Ohio Valley from the menace of serious floods but also aid in navigation. This $100,000,000 flood-control system has contributed immensely to the redevelopment program in Pittsburgh and throughout the region.

The striking Alcoa Building, headquarters of the Aluminum Company of America, was completed and opened recently. A block away is the 41-story United States Steel–Mellon Bank Building. Between these structures in Mellon Square—a combination 6-story underground garage and city park. Ground-breaking ceremonies for this project were held several months ago.

The Point project in the 59 acres at the heart of Pittsburgh, where the Monongahela and Ohio Rivers meet, is being advanced steadily. The area for the 36-acre Point State Park has been cleared, graded, and landscaped. Construction work for a river wall around the historic park and a new double-deck bridge across the Monongahela River is now under way.

Gateway Center—the new business district built by the Equitable Life Assurance Company adjacent to the park—is now occupied by some of the most noted names in United States corporation affairs and stands as a fine example of how a city can rebuild blighted areas into new usefulness.

An educational and cultural rebirth has gone hand in hand with physical rebuilding and is enriching every phase of life here. Pittsburgh looks forward to 1958—the bicentennial of the city's founding.

WILLIAM B. SNYDER, III
President
Allegheny Conference on Community Development

Rome, N. Y.

COORDINATED CITIZEN ACTION in Rome, N. Y., changed the city government from strong mayor to council-manager; protected the new charter against political attack designed to eliminate it; and elected a friendly majority pledged to appoint a professional city manager.

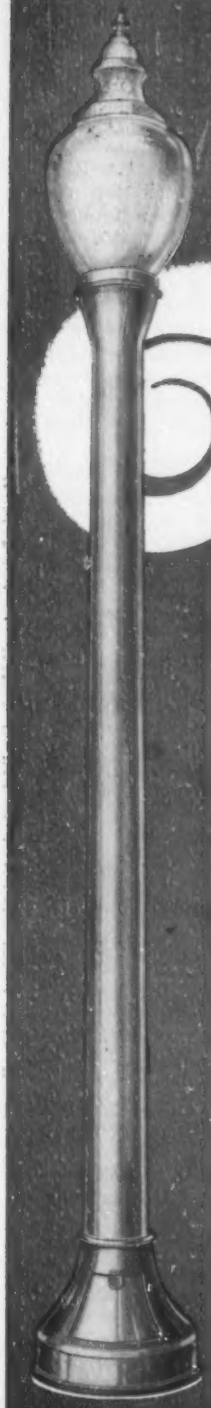
A citizen revolt against inefficient partisan municipal government, with high taxes and poor services, started in 1951. Two taxpayers' organizations formed the Rome Citizens' Committee for Council-Manager, hired Dr. George H. Hallett to adapt the mayor-council charter to the council-manager form, and, by petition, put it on the ballot.

Despite the combined political attack of both major parties, the council-manager charter was adopted at the 1951 election, to become effective January 1, 1954.

An attempted political coup in 1953 sought to re-amend the charter back to the mayor-council form by pushing a special election bill through the Legislature in the last hours of the session. This so incensed the citizens that they caused the Republican assemblyman who had sponsored the bill to ask the Governor for a veto.

At the election of nine councilmen-at-large for the first two years of council-manager operation, the Citizens Committee advanced a nonpartisan slate of six people, which led the ticket in spite of the continued opposition of the Republican administration which had just given the city its most efficient government in years, and in spite of the personal popularity of the young mayor.

The support of the community's newspaper, *The Rome Daily Sentinel*, was an influential factor in the outcome of all three citizens' campaigns — adoption,



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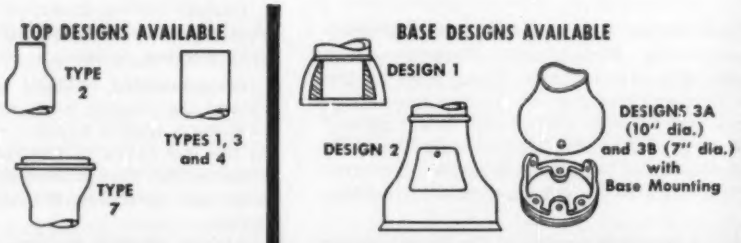
HAPCO PEDESTAL LAMP POSTS

The corrosion resistant aluminum alloy used for all parts of Hapco Pedestal Poles eliminates painting and holds maintenance costs to a minimum. They weigh about one third their counterparts in steel and reduce costs of handling, trucking, and erection.

Hapco Pedestal Poles provide attractive lighting for boulevards, park roads, and institutional grounds, as well as for business and residential sections.

The four base designs and five types of pole tops, with heights from 6 to 14-feet, provide a wide selection. All poles are provided with 20-inch galvanized steel anchor rods. Festoon outlets are available. Type 7 top is designed to fit most globe or lantern type luminaires. Handholes will be furnished on request for Designs 1 and 3A. Designs 3A and 3B should be particularly noted for the installation feature, which involves the mounting flange used as an anchor rod template. When concrete has set, installation is completed by fitting the pedestal over the flange and inserting the three horizontal bolts from the outside.

Write for full information or refer to Linebuilder page 935.



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defense, and implementation of the Municipal Charter.

Another factor of major importance was the formation of "The Women in Government (WIG's)," which endorsed and worked for the entire Citizens Committee slate of councilmen—including one of the WIG's who is the first woman to be elected to Rome's City Council. The WIG's' subsequent activity has also been a vital factor in the success of the citizen's movement.

Rome's nonpartisan citizen action produced two totally unexpected results. It proved, for the first time, that residence, racial origin, or sex of a candidate need not be a factor in a city-wide election in Rome, and it pulled the people of Rome closer together through a campaign in which citizens from all areas and all walks of life worked side by side for a common cause.

FRITZ S. UPDIKE
Executive Editor, Rome Daily Sentinel

Toledo, Ohio

NECESSITY threw out the challenge; resourceful Toledo citizens met it with a display of constructive local leadership that prompted President Eisenhower to observe: "This action is a striking example of local initiative and enterprise."

Imaginative, constructive, and sustained citizen action—that is the story. Acquiring a future-design, self-supporting airport without federal aid is merely the current issue.

When it became apparent in 1944 that the city would need an express airport to handle post-war transportation, prospects were most dismal. Bond payments on the existing port were scheduled through 1955: aviation earnings did not cover operating expenses; and the public was in no mood to increase the subsidy.

However, the Chamber of Commerce started fighting to keep Toledo on the national air map, and the Toledo Municipal League started studying "how."

They produced a series of very practical citizen recommendations and actions which resulted in vastly improved and expanded airport management approximating that of a self-supporting utility. These successful actions earned respect and widening support, so that when the United Toledo Committee campaigned in 1951 for a $1,700,000 revenue-bond authorization to match $1,500,000 of hoped for federal aids, the voters approved.

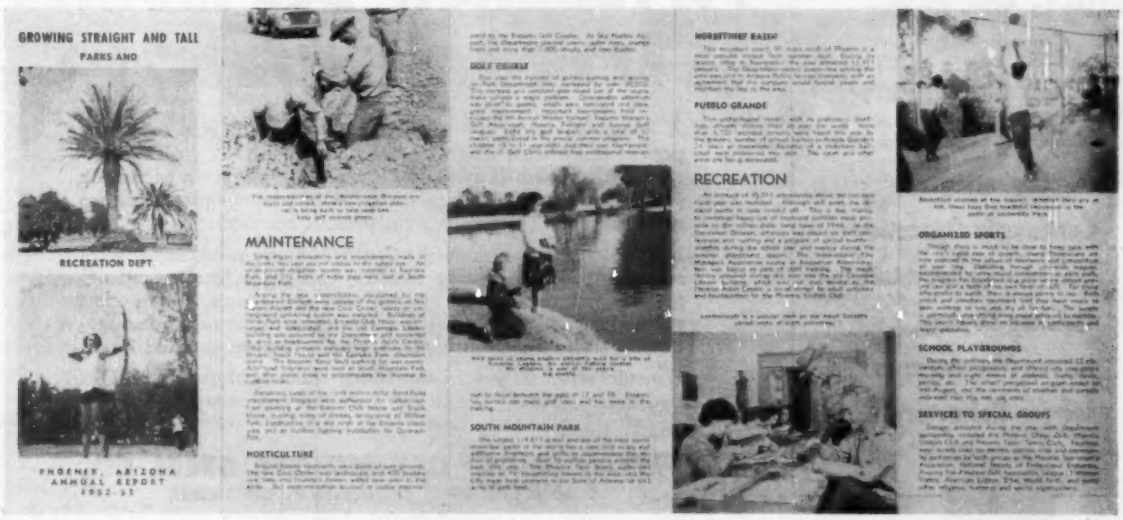
But when federal aid was finally denied in May 1952, doubling the potential local financing problem, and when city officials failed to solve the site problem, the project seemed stalemated.

Suddenly, in October 1952, six businessmen acquired and offered a half-million-dollar site for actual cost. Then with the United Toledo Committee backing a financing plan recommended by the Municipal League, the City Council redrafted and submitted for voter approval an ordinance providing for complete local financing of a $3,500,000 airport on a pay-as-you-go basis.

Voter approval in May 1953 reached an unprecedented 70% and Toledo is now building that express airport—the one that never got beyond discussion until the citizens became aroused over years of official wavering and inaction; the one that had to be self-supporting; the first large-city airport financed without federal aid since the Federal Airport Act was passed in 1946.

WILLARD W. SMITH
The Municipal League of Toledo

Phoenix Parks and Recreation Report



The four-fold, one-sheet report which has been so effectively used by a number of smaller municipalities for their annual reports to citizens is being gradually adopted by individual city departments in several places. An example is the Phoenix report shown above. The reverse side contains information on Future Plans, Attendance Figures, and statistics on Expenditures and Revenues. As noted by the front "cover," at left, the report has a theme, "Growing Straight and Tall," which is emphasized in the contents. Phoenix, with a population of 129,700, spent $598,655 on parks and recreation in 1952-53, and had revenues of $221,602, leaving a net cost of $377,053. Per capita city expenditures amounted to $4.62. Total participants in the Phoenix parks and recreation program activities numbered 3,097,586, and the total spectators were 798,200.

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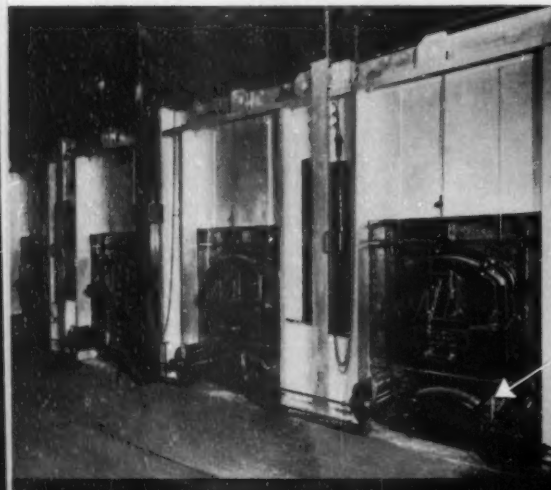

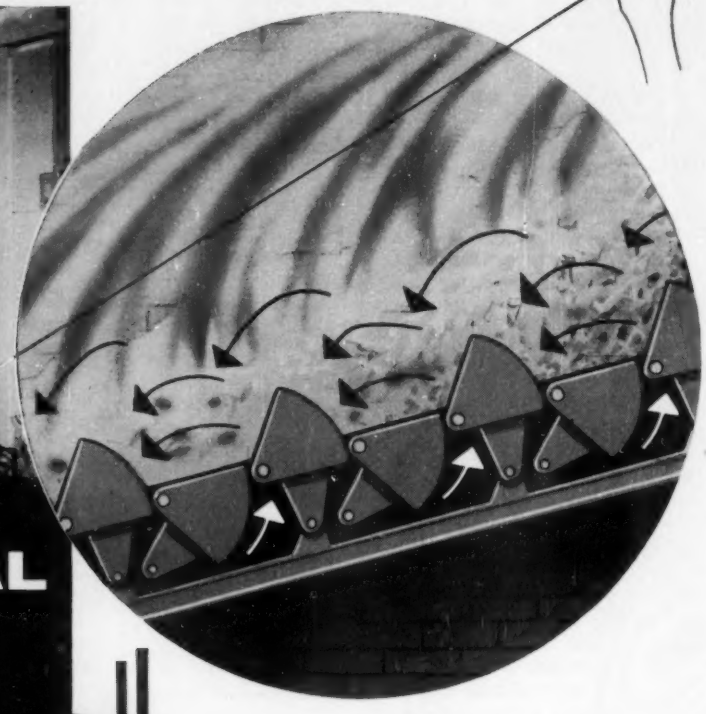

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Who Gets Press Cards?

WHO HAS THE RIGHT to press cards—those magic tickets that get a reporter past police and firemen's lines and sometimes let him park his car where the plain citizen can't?

The usual practice in cities appears to be that the decision rests with top officials of the police department, the American Municipal Association says. The association queried Detroit, New Orleans, Milwaukee, and Kansas City, Mo., and found that that's the way those four cities handle the situation.

"Free-Lance" Reporters Excluded

Specific requests for individual reporters are required in Detroit and Kansas City from the managing editor or editor of a publication or the head of a radio or TV newsroom. "Free-lance" reporters or photographers are thus excluded from lists of those permitted to have press cards. Detroit and Kansas City also require that the bearer be identified on the press pass itself—in Detroit by means of a photograph affixed to the card and in Kansas City by an entry of age, height, weight, and color of hair and eyes.

Holders of press cards from New Orleans and Milwaukee accept the following conditions printed on the card: "The holder hereof assumes all risks of accidents and agrees to abide by all orders given him by such police officer as may be in charge of the lines where the holder of the ticket is present."

Annual Renewals in Some Cities

In Milwaukee and Kansas City, press cards must be renewed annually. Kansas City uses cards with different colors for reporters on daily and weekly newspapers, and a third color for radio and TV newsmen. Signature of the head of the police department is required to authenticate cards in all the cities.

Milwaukee is the only one of the four cities to issue press tags for cars. These go only to press photographers and TV cameramen, whose bulky and heavy equipment often means that they need to drive to the scene of news events. The automobile cards are serially numbered, signed by the chief of police, and carry in bold type the words "Press Photographer."

The association found that holders of press cards in Kansas City and Detroit also often have automobile press cards which they have had printed for themselves but said that these have no validity unless backed up by possession of the municipally issued personal card.

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May 14, 1953 180

The Department of Sanitation in support of its preference for the escalator compactor body cites the following among its reasons:

1. Universal use of the unit on all types of collection service at maximum efficiency. Unit can be assigned to any collection route whether on straight ashes, garbage or mixed refuse. This flexibility of the assignment is especially important in the light of the extension of the incinerator program and the separation of ashes.

2. Due to a smaller hopper opening there is less spillage both on the part of the loaders and as a result of winds. Likewise the operation is more sanitary since the loaders are not exposed to the refuse and odors as is the case on a batch-type large hopper.

3. Batch-type unit is a single purpose truck for mixed material and not fully satisfactory for straight collection of ashes.

4. As a continuous loader, the escalator compactor unit daily payload performance is greater than the batch-type unit.

5. During a comparable nine month period of the term of the manufacturer's guarantee on the latest delivseries of 210 escalator-type and 140 batch-type units the average percentage of lost days due to repairs to days assigned to district garages in the case of the escalator-unit equalled only 1.8% while for the batch-type the average percentage was 19.5%.

6. The Consulting Engineers employed by the Mayor's Committee on Management Survey to study the operations of the Department of Sanitation recommended that the escalator-compactor type collection truck become the standard collection unit for future purchases.

7. It is the Department of Sanitation's intention to standardize its refuse collection truck fleet on the escalator type...

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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Agricultural vs. Residential Development—Non-Conforming Use

CALIFORNIA. *Orange County* v. *Goldring*, 263 Pacific (2d) 321 (District Court of Appeal, November 23, 1953.)

A tract of open land had been used sometimes for raising crops and occasionally for feeding of livestock. Residences and a school were built nearby, and the area was rezoned for residential purposes. Despite the rezoning and instructions to stop construction, the owners proceeded to build some large bins for feeding several hundred cattle. The county authorities brought this action to enjoin defendants from feeding cattle on the land in question on the ground that the feeding bins represented an unwarranted expansion of a nonconforming use.

In the opinion, the Court held that construction of the feeding bins was "a formidable change and departure from the established use," and noted that the change resulted in added noise and stench. After referring to the general policy of the law to eliminate nonconforming uses as rapidly as practicable, the Court emphasized a distinction made in previous legal decisions—between a nonconforming use of buildings, which usually involved a substantial investment, and a nonconforming use of land "where the owner has made no investment in its improvement, and where, in most instances, he would be expected to suffer no hardship if compelled to conform to the strict letter of the zoning plan." The point is, of course, that in the latter case there is less reason to protect a nonconforming use.

In the substantial number of zoning ordinances which now require termination of nonconforming uses, compulsory termination of nonconforming buildings is usually applied only over a long period, and compulsory termination of open uses of land is usually provided for within a few years. The above case reinforces the constitutional justification for such a distinction.

Designation of "Ponding Areas"

KENTUCKY. *Hager* v. *Louisville & Jefferson County Planning & Zoning Commission*, 261 South Western (2d) 619 (Court of Appeals, October 16, 1953).

In this case, the Commission amended the "master plan" by designating certain unincorporated territory as "ponding areas," which meant that such areas would be needed eventually as temporary storage basins in a flood-control project for the entire area. When the landowners challenged this resolution, the defendants argued that the Commission's action did not involve any regulation of the plaintiff's property rights, but was merely a change in the master plan to mark out such areas for the convenience of the public, and that in any event such a designation represented merely a recognition of certain physical features long present. The Court, however, held that such a resolution was designed ultimately to involve a drastic limitation on the use of the property, and represented an unconstitutional deprivation of property rights.

Estate Zoning Regulations

ILLINOIS. *Du Page County* v. *Hakkier*, 115 North Eastern (2d) 635 (Supreme Court, November 18, 1953).

The regulations for the "Estate District" of the Du Page County zoning ordinance required an average lot width of 165 feet and a lot area of 2½ acres. This case involved an application to develop smaller lots on a tract located at the edge of the Estate District. A number of establishments located nearby, but in other districts, did not conform to the standards of the Estate District. The Court held that, because of these nearby uses, this lot was not suitable for development under the standards of an Estate District, and that the regulation was therefore invalid.

Prohibition of Residences In Recreation Area Along Beach Front

CALIFORNIA. *McCarthy* v. *City of Manhattan Beach*, 257 Pacific (2d) 679 (District Court of Appeal, May 27, 1953).

A sandy strip about 175 feet wide, running along the back of a beach, was located in front of a 50-foot right-of-way, formerly used for an electric railway and now as a state park; behind that was a 15-foot cement walk, and behind that a group of residential and business buildings. In another municipality a few hundred yards away, the equivalent strip was developed with residences. The city had been attempting repeatedly over some 14 years to condemn the strip for park development, but had never gone through with the proceedings, apparently because of inability to pay.

In 1941, the city rezoned the area to permit beach recreational activities, but to forbid residences. The only structures permitted were lifeguard towers, fences, and small signs, but a fee could be charged for admission. When the owners challenged this ordinance, the city defended on the ground that residential development along this strip would be subject to flooding and so unsafe, even if the residences were erected on pilings—and that in the latter event the areas underneath the residences might be used for immoral purposes. There was some conflict of evidence at the trial on the possibility of flooding, particularly with residences built on pilings. The Court held that in this situation the restriction against residential development was arbitrary and unconstitutional. Clearly, the evidence that the city was trying to hold down the value of the land, with a view to eventual condemnation, played a major part in the decision. As to the point on public morals, the Court said:

"The fact that it is easier to police the vacant property than it is to police the improved property is not a proper basis for restricting the appellants in the use of their property."

This case has a significance quite apart from the special circumstances involved. The important place to prohibit residences is in industrial districts, in order to protect both the health and safety of residents and the integrity of large industrial sites. Yet even in the latter situation, where such a prohibition is of major importance to the future urban pattern and obviously more defensible legally, the state of the law is still in considerable flux. In this situation it is sheer irresponsibility to try—as some communities are doing—to extend the prohibition of residences to other and less obnoxious districts.

Exclusion of Hospitals from Residence Districts

NEW JERSEY. *Hasbrouck Heights Hospital Association* v. *Borough of Hasbrouck Heights*, 99 Atlantic (2d) 591 (Appellate Division, October 8, 1953).

DISTRICT OF COLUMBIA. *American University* v. *Prentiss*, 113 Federal Supplement 389 (District Court, 1953).

In the New Jersey case, the local zoning ordinance was amended to forbid nursing homes, sanitariums, and hospitals in residential zones. The case involved the application of this prohibition to prevent a rather small addition to an existing hospital in such a district. The Court held that there was nothing in the record to overcome the presumption that such a zoning regulation was reasonable. The opinion contained some general language on the need for increased restrictions in crowded urban areas, but no analysis of the basic problems involved in this particular regulation.

A large number, perhaps half, of recent zoning ordinances have excluded hospitals from low-density residence districts—which in those communities with little or no multiple-family residential zoning, often means their exclusion from all residence districts. It is of course true that under certain conditions hospitals do not make good neighbors in a low-density residential neighborhood, primarily because of the large amount of transient parking which may flood the nearby residential streets. In part, of course, this may be remedied by requiring parking facilities along with hospitals. However, in these ordinances, very little consideration is given to the proper location of hospitals, and thus to the needs of the sick. It is an axiom of modern medical care that quiet and pleasant surroundings, preferably with a bit of greenery, are definitely conducive to recovery from both physical and mental illness.

In the District of Columbia case, the Court held that a rezoning to prevent a hospital, apparently at the behest of residential owners nearby, was invalid.

Tenant Relocation Needs Spotlighted by New York

A BASIC and startling study concerned with tenant relocation problems, whose methodology and findings may be of interest in other cities contemplating comprehensive urban rehabilitation and redevelopment programs, was released in January by the New York City Planning Commission.*

The report outlines the immensity of the New York City relocation problem for families displaced because of public projects, greatly accentuated by the tight housing supply, the immigration of nonwhite and Puerto Rican families into New York, the shortages of vacant land sites, the large number of existing dwellings more than 50 years old, and the size of future relocation needs for various improvements.

Of special interest to other cities are three appendices: The Role of Legislation in Coping with Discrimination in Housing; Review of Relocation Programs in Other Cities, and Special Survey of Tenants Displaced from 39 Sites Cleared for Public Housing, 1946-1952. Forty-one tables, 4 charts, and 8 maps aid in documenting the seriousness of the situation.

Although the report's release was delayed by political controversy, and the Planning Commission's members split 4 to 3 on the recommendations, there was no substantive disagreement on the report's factual analysis and the statistics presented.

Major points of difference centered on the proposed annual construction goals of dwelling units (with the majority citing 40,000, and the minority urging 44,000 dwelling units per year), the need for establishment of a Central Relocation Bureau as contrasted with the present system of relocation by numerous public and private agencies, and establishment of uniform standards for the rehousing of all tenants who are to be displaced by public projects.

* The extent of the problem is indicated in some of the statistical material presented. They show that 63,630 tenants, including 45,810 families, and 17,820 individuals, a total of approximately 170,000 persons, had to leave their dwelling accommodations from January 1, 1946, through March 31, 1953, in order to make way for both public and private residential and nonresidential construction projects.

Of the total number of tenants displaced, 37% were nonwhite and Puerto Rican (the in-migration of Puerto Ricans to New York City is currently averaging about 45,000 per year).

Based on the expected housing and public works programs, 56,120 tenants, including 40,410 families and 15,710 individuals, a total of approximately 150,000 persons will be displaced in the three years from April 1, 1953, to March 31, 1956.

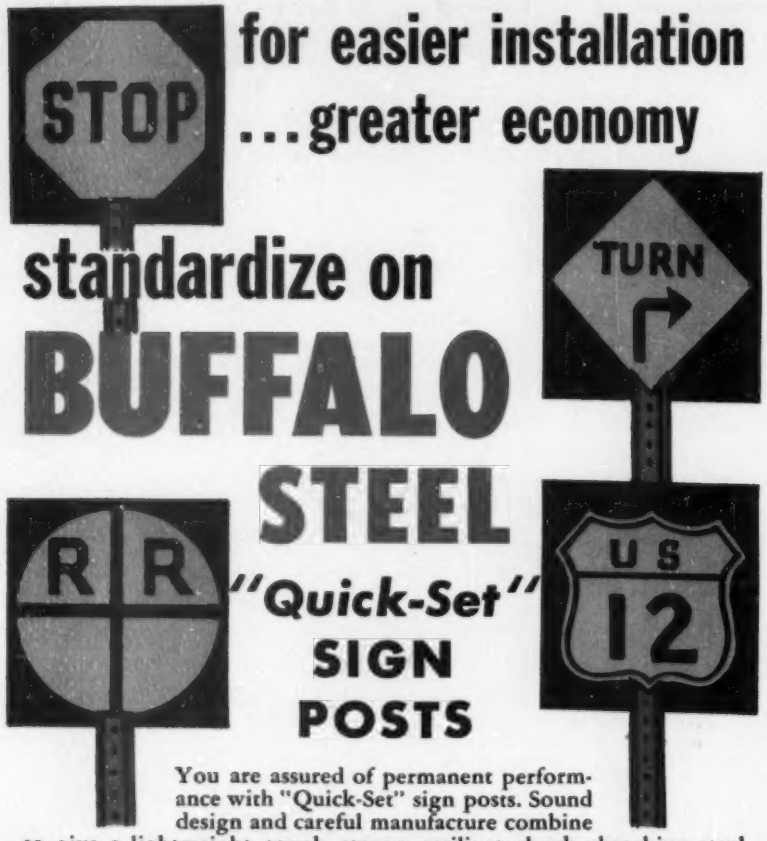
The Title I urban redevelopment program is displacing 15,820 tenants on ten sites where 13,784 units are expected to be constructed. Of the total 56,120 tenants to be displaced (including families), it is estimated that at least 16,000 tenants will require public housing in these three years. During the same period, the Housing Authority expects to complete 29,102 apartments.

The complete report may be obtained upon request to Miss Pauline J. Malter, Secretary, City Planning Commission, 2700 Municipal Bldg., New York 7, N. Y.

Austin, Texas, Approves Varied Bond Issues

BETTER THAN 4 to 1 approval was received by the five revenue-bond-issue propositions for various public works improvements submitted to the voters of Austin, Texas, on January 30.

Included were: waterworks, $6,190,000; sewer system, $1,500,000; electric, $9,110,000; auditorium, $1,750,000; and refunding, $6,190,000.



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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Annexation of Highway—Failure to Include in Description Invalidates Ordinance

In proceedings for annexation of township land by city where land was separated from city by township highway, held, in reversing order upholding annexation, that land was not contiguous and, therefore, not subject to annexation by the city since no part of highway was included in description of tract to be annexed. *In re Lancaster City Ordinance; Appeal of Manheim*, 98 Atl. (2d) 34 (Penn., June 26, 1953).

Beach—Defect in Stairway Causing Injury at Night—City Not Liable

In action for personal injuries received by plaintiff who fell while proceeding in darkness down strange stairway maintained by city to beach, held that plaintiff was barred from recovery because of contributory negligence in not exercising care of ordinary prudent person. *Cheyney* v. *City of Los Angeles*, 258 Pac. (2d) 1099 (Cal. App., July 7, 1953).

Beer Permit—Revocation Without Notice or Hearing Upheld

In certiorari challenging legality of action of city council in revoking plaintiff's class "B" beer permit without notice or hearing, held, in reversing decision for petitioner, that when council acted on its own motion, and not under statute relating to action taken on complaint of citizens or police officer, notice and hearing were not required. *Walker* v. *City of Clinton* 59 N. W. (2d) 785 (Iowa, July 17, 1953).

Begging—Ordinance Prohibiting Upheld

On appeal from conviction as common beggar in violation of municipal ordinance, held that ordinance providing for prosecution of beggars was not in conflict with state statute relating to tramps and was valid exercise of police power. *City of Cleveland* v. *Gogola*, 113 N. E. (2d) 264 (Ohio App., June 22, 1953).

Bingo Held to Be Lottery— Veterans' Operation for Charity Illegal

In action to determine validity of sponsorship by veterans organization of bingo games not conducted for profit and to enjoin police from arresting bingo operators, held, in denying injunction, that since veterans' organization paid its employees, lottery statute made it unlawful for veterans' organization to operate bingo for charity and that game of bingo is a lottery. *Loder* v. *City of Canton*, 111 N. E. (2d) 793 (Ohio App., Aug. 18, 1953).

City Employees—Summary Dismissal of Invalid

In mandamus to compel reinstatement with back pay of discharged city employee, held that employee holding unofficial title of accountant and office manager had civil service status and was not subject to summary dismissal. *State ex rel. Paylor* v. *City of Knoxville*, 259 S. W. (2d) 537 (Tenn., June 5, 1953).

City Hall—Lease of Portion for 99 Years—Township Stopped from Voiding by Conduct

In action by township to have ninety-nine-year, renewable-forever lease of portion of town hall declared null and void, held that township having received the benefits of lease since its execution in 1873 was estopped by common honesty and good faith from questioning its validity. *Trustees of German Township* v. *Farmers and Citizens Savings Bank Co.*, 113 N. E. (2d) 409 (Ohio App., May 14, 1953).

Civil Service—City Parking Authority Employees Not Subject To

In action to determine whether or not the employees of city parking authority were subject to provisions of Civil Service Act, held that parking authority was not subject to provisions of Civil Service Act since it was independent public corporation. *State Department of Civil Service* v. *Parking Authority of City of Trenton*, 99 Atl. (2d) 177 (N. J. Super. Ct., Aug. 4, 1953).

Dogs—County Ordinance Prohibiting Running at Large Valid

On appeal from conviction of violating county ordinance regarding keeping and control of dogs, held that ordinance prohibiting owner from allowing dog to roam away from "premises where same is kept" sufficiently describes area to which dogs are to be confined and hence is constitutional. *Markus* v. *Justice's Court of Little Lake Tp.*, 255 Pac. (2d) 883 (Cal. App., Apr. 21, 1953).

Drunk-O-Meter—Evidence Obtained By Use of Admissible

On appeal from conviction for driving while intoxicated, held that admission of police officer's testimony respecting the drunk-o-meter test was not prejudicial even if officer was not qualified to operate machine or give opinion as to results, where testimony was confined to observation of defendant's physical condition and to the number of the reading which was obtained from test and on which he expressed no opinion. *Omohundro* v. *Arlington County*, 75 S. E. (2d) 496 (Va. App., April 20, 1953).

Fluoridation of City Water Supply—San Diego Ordinance Providing For Constitutional

In action by taxpayer and elector, and in claimed representative capacity to enjoin mayor, city council, and city officials from adding fluoride compound to city water supply, held that introduction of fluoride compound in amount sufficient to maintain one part of fluoride per one million parts of water was a proper health measure, and complied with statutory standards for pure, wholesome and potable water, and ordinance allowing fluoridation was not an invasion of any rights secured by fundamental law, nor did it violate any of plaintiff's rights under the state or federal constitutions. *De Aryan* v. *Butler*, 260 Pac. (2d) 98 (Cal. App., Aug. 13, 1953). *Reh. den.* Aug. 31, 1953.

Garbage Incinerator—City Not Liable for Injuries

In action against city for injuries sustained by garbage collector from fall into city incinerator allegedly caused by city employee, held, in reversing lower court and entering judgment for city notwithstanding verdict, that operation of incinerator plant was governmental function. *Kunz* v. *City of Titusville*, 97 At. (2d) 42 (Penn., May 26, 1953).

Housing Authority May Not Acquire Land and Turn it Over to Private Interests for Development

In action by taxpayer to enjoin housing authority of City of Panama from acquiring land and erecting housing units for U. S. Navy or others, held that housing authority had authority to acquire land, but not to turn land over to private interests for low-rent naval housing project. *Lewis* v. *Peters*, 66 So. (2d) 489 (Fla., July 21, 1953).

Income Tax—Statute Applicable to Only One City Valid

In action to have statute and ordinance enacted thereunder declared void which authorized any charter city with population in excess of 700,000 to levy and collect "earnings tax," held, in upholding constitutionality of statute and ordinance that statute does not violate provisions against special laws through statute by its period of duration can apply only to City of St. Louis. *Walters* v. *City of St. Louis*, 259 S. W. (2d) 377 (Mo., June 8, 1953). *Reh. den.* July 13, 1953.

Off-Street Parking System—Revenue Bonds for As Public Purpose

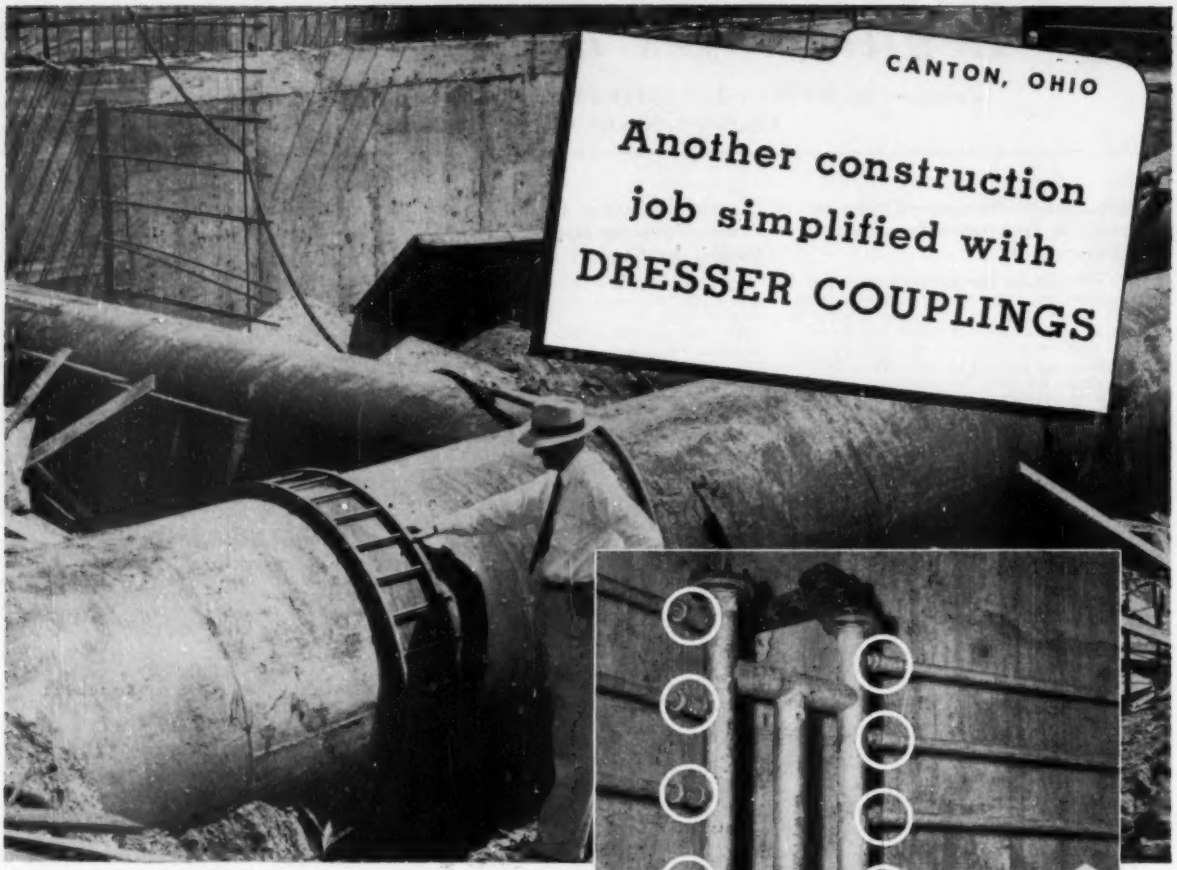
An action to have declared invalid special acts authorizing city to acquire off-street parking system and issue bonds in connection therewith, held that acquisition of off-street parking system was acquisition of property for public purpose in view of traffic congestion and other problems therein involved. *Gate City Garage, Inc.*, v. *City of Jacksonville*, 66 So. (2d) 653 (Fla., July 10, 1953). *Reh. den.* July 30, 1953.

Plumber Licenses—Ordinance Classifying Upheld

On appeal from conviction for working as plumber without license, as required by ordinance, held in affirming, that ordinance which required similar examination for master and journeyman plumber but required an additional fee and bond from master plumber was reasonable exercise of police power to protect the public health. *City of Sioux Falls* v. *Kadinger*, 59 N. W. (2d) 631 (S. D., July 13, 1953).

Signs—Ordinance Limiting Size Valid

In mandamus to compel city to issue permit to erect large electric sign over sidewalk, held, in reversing lower court, that ordinance limiting size of such signs, except upon approval of City Council, was not unreasonable or discriminatory. *Herman Armanetti, Inc.*, v. *City of Chicago*, 112 N. E. (2d) 616 (Ill., May 20, 1953).



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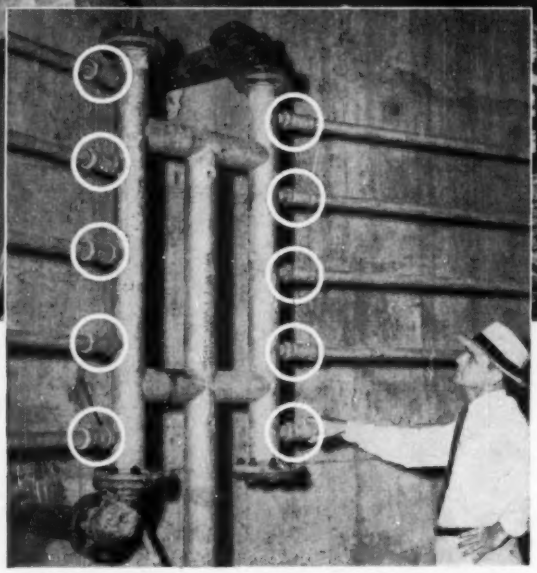

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Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Cyril Henderson
Kitimat, B. C.

J. R. Castner
Herndon, Va.

Karl G. Williams
Madison, S. D.

G. H. Hackmaster
Independence, Kans.

Robert P. Aex
Rochester, N. Y.

Pittsfield, Maine, appointed RAY H. BADGER to succeed Frank S. Keezer (deceased) as city manager.

HARMON R. BENNETT, formerly acting city manager, was appointed city manager of Burbank, Calif., to succeed E. J. Friedrich.

DONALD H. BLATT left the managership of Stoughton, Mass., to succeed Robert P. Aex as city manager of Newburgh, N. Y.

An engineer, CAREY BURNETT was appointed city manager of Albany, Ga., succeeding W. S. Sharman.

The first manager of Gloucester, Mass., is DEAN C. CUSHING, manager of Wilmington, Mass.

GEORGE HAMMAR, the superintendent of water and streets, was appointed acting city manager of Stambaugh, Mich., succeeding Leonard Harris.

DAVID A. HARNER succeeds Walter E. Cook as city manager of Jacksonville, Texas.

Sioux City, Iowa, appointed R. M. HOISINGTON, manager of Springfield, Ohio, as first city manager.

The first manager of Savannah, Ga., is F. A. JACOCKS, now manager of Spartanburg, S. C.

ERNEST P. KIDD was appointed city manager of Sylvania, Ga., succeeding Charles T. Yancey. Mr. Kidd was formerly assistant to the city manager at Tallahassee, Fla.

Paducah, Ky., appointed a former state representative, FRED H. MORGAN, to succeed Glenn Lovern as city manager.

The first manager of Delaware, Ohio, is ROBERT E. MOTT, one-time manager of Galena, Ill.

JULIAN H. ORR left the managership of Bangor, Maine, to succeed Roy H. Owsley as city manager of Portland, Maine.

JACK PICKLESIEMER was appointed the first city manager of Pikeville, Ky.

The first city manager of Ottumwa, Iowa, is ROBERT L. PRICE, manager of Marinette, Wis.

Islesboro, Maine, appointed ELLIS G. REEBY, former manager of Levant, Maine, to succeed Raymond M. Urquhart as city manager.

The first manager of Aurora, Colo., is EARL P. SANDQUIST, formerly assistant manager at Vancouver, Wash.

W. S. SHARMAN left the managership of Albany, Ga., to succeed G. L. Smith as city manager of Toccoa, Ga.

Hanover Borough, Pa., appointed BERNARD F. SMITH, the former borough engineer, to succeed C. A. Eckbert as city manager.

PAUL A. YORK, formerly with General Motors Corporation, was appointed city manager of Rockford, Mich., succeeding C. E. Dennis.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

REPRESENTATIVE MUNICIPAL BOND ISSUES

February 1 to February 11, 1954

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
2-1	University of Arizona	$ 400,000	Dormitory Revenue of 1953	24½	3.01
2-3	Seaside Heights, N. J.	40,000	Storm Damage—1954	5½	2.873
2-4	Attleboro, Mass.	140,000	Water	7½	1.68
2-4	Sioux City, Iowa	250,000	Water Works Revenue	10½	2.66
2-5	Bainbridge, Ohio	8,000	Special Assessment	6½	2.97
2-5	Montgomery Co., Ohio	300,000	Voting Machine	6	1.624
2-6	Barnegat Light, N. J.	22,500	Water	5⅚	3.236
2-8	New Washington, Ohio	29,000	Municipal Building	10½	2.669
2-8	Wilkinsburg, Pa.	250,000	General Obligation Improvement	9½	1.728
2-8	Lincoln, R. I.	610,000	High School Building and Equipment	10¾	2.32
2-8	Milwaukee Co., Wis.	1,760,000 1,060,000	County Stadium Metropolitan Sewerage	4½ 4½	1.185 1.185
2-9	Irvington, N. J.	119,000	Improvement	6½	2.019
2-9	Columbia Co., N. Y.	367,500	General Improvement	5⅚	1.57
2-10	Watertown, Mass.	600,000	School	10½	1.816

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THE NEW YORK CITY Board of Estimate has appropriated $500,000 and assigned to the Department of Traffic the job of turning bits of Transit Authority land at subway stations into parking lots. The eight areas chosen for a start are in the boroughs of Queens, the Bronx, and Brooklyn.

The plan is to keep as many as possible all-day and long-time parkers out of Manhattan, and is in line with a proposal in the *Municipal Index* Basic Plan: "To add to the convenience and appeal of the transit service adequate parking facilities should be provided at all stations on the transit lines beyond the belt freeway."

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (•)

March 17-19—Chicago, Ill.
AMERICAN WATER WORKS ASSOCIATION—Illinois Section. Annual Meeting (LaSalle Hotel). Sec., Dewey W. Johnson, Cast Iron Pipe Research Association, 122 S. Michigan Ave., Chicago 3, Ill.

March 18—Boston, Mass.
AMERICAN WATER WORKS ASSOCIATION—New England Section. Annual Meeting (Hotel Statler). Sec., G. G. Bogren, Weston & Sampson, 14 Beacon St., Boston, Mass.

March 18-19—Raleigh, N. C.
SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE. (North Carolina State College.) For information address Mrs. H. F. Oehler, Jr., Office of Engineering Publicity, North Carolina State College, Raleigh, N. C.

March 19-21—Chicago, Ill.
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Meeting (Conrad Hilton Hotel). Sec.-Treas., Laverne Burchfield, 1313 E. 60th St., Chicago 37, Ill.

March 22-24—Little Rock, Ark.
ARKANSAS WATER AND SEWAGE CONFERENCE. Annual Meeting (Marion Hotel). Sec., Harrison Hale, Southern State College, Magnolia, Ark.

March 22-26—Amherst, Mass.
SEWAGE TREATMENT WORKS OPERATORS' Short Course. (New England Field Training Center, University of Massachusetts). For information address the Division of Training, Massachusetts Department of Public Health, 543 State House, Boston 33, Mass.

March 24-26—New York, N. Y.
NATIONAL HEALTH COUNCIL. Annual Meeting. Exec. Dir., Philip E. Ryan, N.H.C., 1790 Broadway 19, N. Y.

March 25-27—Baton Rouge, La.
LOUISIANA MUNICIPAL ASSOCIATION. Annual Convention (Heidelberg Hotel). Sec.-Treas., Mrs. Douglas M. Warriner, 538 Reymond Bldg., Baton Rouge, La.

March 29-31—Greenville, S. C.
AMERICAN WATER WORKS ASSOCIATION—SOUTHEASTERN SECTION. Annual Meeting (Poinsette Hotel). Sec., N. M. deJarnette, 245 State Office Bldg., Atlanta 3, Ga.

April 7-9—Emporia, Kans.
AMERICAN WATER WORKS ASSOCIATION—Kansas Section with the KANSAS SEWAGE WORKS ASSOCIATION. Annual Meeting (Broadview Hotel). Sec.-Treas. Kansas Section, Harry W. Badley, 119 W. Cloud, Salina, Kans.; Sec.-Treas. Sewage Works Assn., Dwight Metzler, Room 2, Marvin Hall, Lawrence, Kans.

April 12-14—Toronto, Ontario
AMERICAN WATER WORKS ASSOCIATION—Canadian Section. Annual Meeting (Royal York Hotel). Sec., A. E. Berry, Director Ontario Department of Health, Parliament Bldgs., Toronto 8, Ont.

April 19-22—Lafayette, Ind.
PURDUE ROAD SCHOOL. (Purdue University). Exec. Sec., Ben H. Petty, Professor of Highway Engineering, CE Bldg., Purdue University, Lafayette, Ind.

April 22-23—Lincoln, Nebr.
AMERICAN WATER WORKS ASSOCIATION—Nebraska Section. Annual meeting (Cornhusker Hotel). Sec.-Treas., E. Bruce Meier, 201 Mechanic Arts, University of Nebraska, Lincoln, Nebr.

April 22-23—Watertown, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Meeting (Woodruff Hotel). Sec., Kimball Blanchard, Room 1922, 50 W. 50th St., New York 20, N. Y.

April 22-24—Tucson, Ariz.
ARIZONA SEWAGE AND WATER WORKS ASSOCIATION. Annual Meeting (Santa Rita Hotel). Exec. Sec., M. V. Ellis, Supervisor Sewage Treatment Plant, Phoenix, Ariz.

April 23-24—Bozeman, Mont.
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Baxter Hotel). Sec., A. W. Clarkson, Assistant Director, Division of Environmental Sanitation, State Board of Health, Helena, Mont.

April 26-29—Washington, D. C.
CHAMBER OF COMMERCE OF THE UNITED STATES. Annual Meeting. Exec. Vice-Pres., Arch N. Booth, 1615 H St. NW., Washington, D. C.

May 3-5—Chattanooga, Tenn.
AIR POLLUTION CONTROL ASSOCIATION. Annual Meeting (Patten Hotel). For information address Robert T. Griebling, 4400 Fifth Ave., Pittsburgh 13, Pa.

(Continued on page 173)

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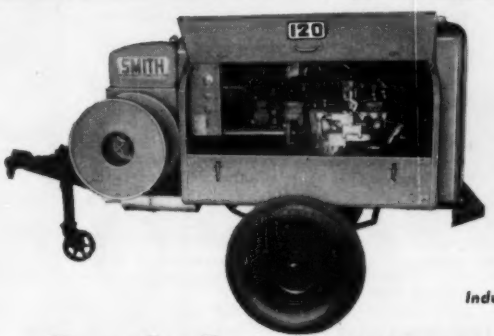

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Crane Hook	Rock Fork
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Dumping height*	Dumping height*	Dumping height*	Torque Converter Drive
9 ft., ¼ in.	11 ft., 4 in.	12 ft., 8 in.	Dumping height*
			13 ft., 5 in.

*Height of bucket hinge

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May 4-6—Chicago, Ill.
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Hotel Morrison). Exec. Sec., Alex Radin, 1757 K. St. NW., Washington 6, D. C.

May 4-6—Washington, D. C.
NATIONAL HIGHWAY USERS CONFERENCE. Annual Meeting (Mayflower Hotel). Dir., Arthur C. Butler, 952 National Press Bldg., Washington 4, D. C.

May 5-7—New Orleans, La.
ASSOCIATION OF STATE PLANNING AND DEVELOPING AGENCIES. Annual Meeting. Sec.-Treas., Leslie Hill Prince, 1026 17th St. NW., Washington, D. C.

May 6-8—Gatlinburg, Tenn.
TENNESSEE MUNICIPAL LEAGUE. Annual Meeting (Greystone Hotel). Exec. Sec., Herbert Bingham, 228 Capitol Blvd., Nashville 3, Tenn.

May 9-16—Atlantic City, N. J.
NATIONAL CONFERENCE OF SOCIAL WORK. Annual Meeting (Ritz Carlton and Ambassador Hotels). Exec. Sec., Joe Hoffer, 22 W. Gay St., Columbus, Ohio.

May 10-12—Lafayette, Ind.
INDUSTRIAL WASTE UTILIZATION CONFERENCE. Annual Meeting (Purdue Union Building). Chairman, Don E. Bloodgood, C. E. Bldg., Purdue University, Lafayette, Ind.

May 20-21—Boston, Mass.
AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION. Annual Meeting (Sheraton Plaza Hotel). Sec.-Treas., P. J. Gannon, 1060 Broad St., Newark 2, N. J.

***May 17-22—Washington, D. C.**
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Hotel Statler). Sec.-Treas., Hovey T. Freeman, 60 Batterymarch St., Boston 10, Mass.

May 18-21—Detroit, Mich.
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (Hotel Statler). Pres., Arthur Shinners, Town Hall, Brookline, Mass.

May 23-26—Chicago, Ill.
NATIONAL ASSOCIATION OF PURCHASING AGENTS. Annual Meeting (Conrad Hilton Hotel). Sec., Eugene A. Gump, Purchasing Agent, State of Michigan, Lansing, Mich.

May 23-27—San Francisco, Calif.
MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Meeting. Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago, Ill.

May 23-28—Seattle, Wash.
AMERICAN WATER WORKS ASSOCIATION—National group meeting jointly with the Pacific Northwest Section. Annual Conference. Sec., AWWA, Harry E. Jordan, 521 Fifth Ave., New York, N. Y.; Sec.-Treas., Pacific Northwest Section, O. P. Newman, Box 548, Boise, Idaho.

May 24-26—Elmira, N. Y.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Hotel Mark Twain). Sec., Chief Edwin J. Clark, Box 271, Wayne, Pa.

***June 2-4—Sioux Falls, S. D.**
LEAGUE OF SOUTH DAKOTA MUNICIPALITIES. Annual Meeting (Cataract Hotel). Exec. Dir., J. G. Barger, City Hall, Aberdeen, S. D.

***June 9-12—Moorhead, Minn.**
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting (F-M Hotel). Exec. Sec., C. C. Ludwig, 15 University Library Bldg., Minneapolis 14, Minn.

***June 9-12—Omaha, Nebr.**
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Meeting (Fontenelle Hotel). Sec.-Treas., 1616 Eye St. NW., Washington, D. C.

***June 10-12—Spokane, Wash.**
ASSOCIATION OF WASHINGTON CITIES. Annual Meeting (Davenport Hotel). Exec. Sec., Chester Biesen, 250 Smith Hall, Unisity of Washington, Seattle 5, Wash.

June 13-16—Chicago, Ill.
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (La Salle Hotel). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago, Ill.

June 15-19—Boston, Mass.
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Hotel Statler). Convention Manager, Arthur B. Holmes, 1735 New York Ave. NW., Washington 6, D. C.

***June 16-18—Estes Park, Colo.**
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Stanley Hotel). Exec. Dir., Jay Bell, 327 Norlin Library, Boulder, Colo.

June 16-18—Monticello, N. Y.
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Laurels Country Club). Exec. Sec., Morgan Strong, 6 Elk St., Albany, N. Y.

***July 21-24—New York, N. Y.**
NATIONAL SECRETARIES ASSOCIATION. Annual Meeting (Waldorf-Astoria Hotel). Exec. Sec., Helen J. Boyle, 25 E. 12th St., Kansas City 6E, Mo.

***June 22—Boonton, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Summer Outing. Inspection Trip, and Luncheon. For information, address Sec., C. B. Tygert, Box 178, Newark 1, N. J.

***June 23-25—Allentown, Pa.**
AMERICAN WATER WORKS ASSOCIATION—Pennsylvania Section. Annual Meeting (Americus Hotel). Sec., L. S. Morgan, State Department of Health, Greensburg, Pa.

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Municipal & Civic Publications

The People Act

The Story of An Idea—By Eleanor A. Eaton and E. Gordon Alderfer. Published by The People Act Associates, 157 West 13th St., New York 11, N. Y. December 1953. 22 pp.

Based on the assumption that the responsible cooperative exercise of freedom in the local community is the cornerstone of democracy, "The People Act" has developed during the last four years from an idea into a radio series, an educational tool, a force for democracy, and a voice to and of America. Its instrument has been the tape-recorded documentary showing Americans working together to solve their local problems: civic, health, recreational, educational, industrial, and agricultural. This booklet tells the story to date and gives suggestions for future development of the idea.

Calcium Chloride for Ice Control

First Revision. Calcium Chloride Institute, 909 Ring Bldg., Washington 6, D. C. Paperbound. 30 pp. Free.

A manual that will be handy for street and highway officials. It tells a convincing story about the use of calcium chloride. It draws from the experiences of the American Road Builders' Association, from tests at Iowa State College, and elsewhere.

Helicopter Operation and Design Requirements

Published by International Air Transport Association, International Aviation Bldg., Montreal 3, Que., Canada. 1953. 183 pp. $6 (U. S.).

This condensed record of the Helicopter Symposium, held at San Juan, Puerto Rico, in April 1953, contains material of particular interest to municipal authorities, city planners, architects, contractors, and others who will be called upon to plan, provide, and build facilities for helicopter service into and between the city centers of the world. Chapters V, VI, and VII, which cover the costs of preparing rooftop heliports, zoning requirements, smoke abatement needs, etc., will be of particular interest to readers of THE AMERICAN CITY.

Design and Operation Of Septic Tanks

World Health Organization, Geneva, Switzerland. Copies available from Columbia University Press, 2960 Broadway, New York 27, N. Y. Paperbound. 122 pp. $1.50.

This book would more properly be entitled "Design and Operation of Small Disposal Systems," since it gives information on the smaller Imhoff-type installations and trickling filters as well as septic tanks. The data are drawn from worldwide sources.

Municipal Problems 1953

The Forty-fourth Annual Proceedings of the Conference of Mayors and Other Municipal Officials of the State of New York, 6 Elk St., Albany, N. Y. 143 pp. $2.50.

The proceedings of the Conference held in Long Beach, N. Y., June 17-19, 1953, include papers on such subjects as municipal finance, negligence actions, new social security laws, water supply, equalization progress and franchise valuation, competitive bidding on municipal contracts, municipal fire-protection problems, progress of urban arterial highways in New York State, 1953 legislation affecting cities and villages, municipal personnel, public welfare, state building code, codification of local ordinances, the council-manager plan, home rule, etc.

Home Builders' Manual for Land Development—Revised Edition

The National Association of Home Builders, 1028 Connecticut Ave. NW., Washington, D. C. 1953. 274 pp.

This revised edition of the Manual, based on current up-to-date facts and figures, is designed to serve as a guide in the solution of a wide range of land-planning problems. Site selection, development factors, utilities, streets, lot planning, shopping centers, private covenants, and conservative practices in subdivision planning are among the aspects of land development covered.

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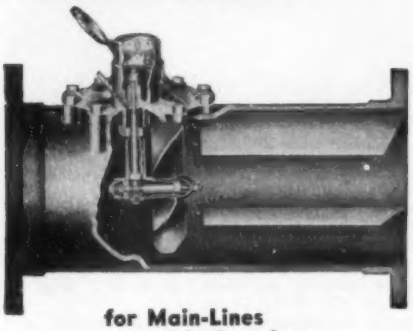

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Land Value Taxation in Canadian Local Government

Being Constructive Criticism on Reports on Provincial–Municipal Relations by British Columbia, Alberta, Saskatchewan, Manitoba—By Herbert T. Owens. Published for The International Committee for Land Value Taxation and Free Trade and The Henry George Foundation of Canada, Inc. Publication office, 222 Wood Ave., Westmount, Que. 1953. 46 *pp.* $1.

The author aims to evaluate the opinions and conclusions of various commissions that have inquired into provincial-municipal relations on matters of taxation in the four above-named provinces, and to present constructive criticism of their reports. The booklet also contains arguments for site-value taxation and experiences with site-value taxation in other parts of the world.

Special Report of Municipal Affairs

New York State Comptroller, Albany, N. Y. 1954. 325 *pp.* $6.

The annual report of the Comptroller relative to the fiscal affairs of municipalities and districts of New York State for 1951, just published, contains a summary of the activities of the Division of Municipal Affairs and a comparative statement of the revenues and expenses of municipalities and districts, together with statistical information concerning their financial condition. The tables cover real-estate valuations, tax, debt, revenue, and expense statistics for local government (summarized), counties, cities, towns, villages, school districts, and fire districts.

Local Development and Enforcement of Housing Codes

Division of Housing Research, Housing and Home Finance Agency. For sale by Superintendent of Documents, Government Printing Office, Washington 25, D. C. December 1953. 55 *pp.* 40 *cents.*

Prepared as an aid for cities interested in developing and enforcing minimum housing standards in order to improve and preserve the existing housing supply, this report covers the technical problems of code formulation and administration.

Two major aspects of the problem are stressed. One is the set of general considerations involved in developing minimum housing standards for a particular community. The other is the fact that the success of municipal policy on housing standards depends on the coordination of certain functions in the health, building, fire, and welfare departments and housing authorities. Sample housing codes and other forms are given in the appendices.

Zoning for Parking Areas in and Near Residential Districts

Information Report No. 57 of the Planning Advisory Service, 1313 E. 60th St., Chicago 37, Ill. December 1953. 24 *pp. Available only to subscribers of the Service.*

More and more communities are finding it necessary to control the location and use of parking lots which, being placed near the fringes of central business districts, often extend into residential areas. This report analyzes various ordinances regulating location, use, and physical features of parking lots.

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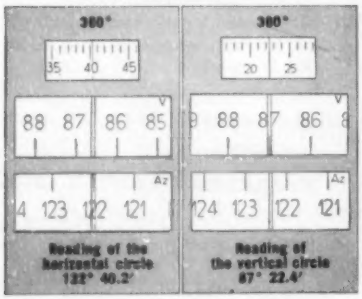

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Local Planning and Zoning

Published by the State of New York Department of Commerce, 112 State St., Albany 7, N. Y. 1953. 88 pp.

The Department of Commerce has issued this revised edition of the manual of powers and procedures for citizens and governmental officials in setting up and administering local planning functions, to meet the constantly increasing demand for the booklet. The publication outlines and explains the authority under which planning and zoning agencies are created, their organization and their powers, duties and responsibilities. This new edition has been revised to include several amendments to planning laws in New York State enacted since publication of the 1951 edition of the manual.

City Plan for St. Albans, W. Va.

(2 Vols.). Prepared for the St. Albans Planning and Zoning Commission by Ladislas Segoe & Associates, Cincinnati 2, Ohio. August 1953. Vol. I—103 mimeo pp. Vol. II—70 mimeo pp.

Volume I comprises reports on surveys, research studies, and major city plan elements, along with explanatory reports on certain development control measures (land subdivision and zoning) and on administration.

Volume II contains subdivision regulations, proposed zoning ordinance, zoning administration items, statement of principles—board of adjustment, and rules of procedure—board of adjustment.

Handbook on Federal Grants-in-Aid

Published by The American Parents Committee, Inc., 52 Vanderbilt Ave., New York 17, N. Y. 1953. 216 pp. $1.50.

This survey of 28 principal programs of federal grants-in-aid describes programs for aid to dependent children, child welfare services, the blind, old age assistance, health services, highways and airport construction, school programs, slum clearance and urban redevelopment programs, etc. It gives data on the amount going to each state, and serves as a guide for making state and local studies of health, education, social welfare and other services which are supported in part by federal funds.

Visual Aids for the Public Service

By Rachel Marshall Goetz. Public Administration Service, 1313 E. 60th St., Chicago 37, Ill. 1954. 89 pp. $3.25.

This manual urges public administrators of all levels to employ films, filmstrips, and graphics for the provision of better training for public servants, the improvement of public relations, and for greater citizen understanding of the problems of modern government. Practicing what it preaches, the booklet demonstrates by means of its own amusing illustrations (drawn by Cissie Peltz) how ideas can be conveyed easily and effectively. Governmental officials and citizens' associations will find the tips and know-how here presented of help in public relations.

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Zoning Policies for Boston

Boston City Planning Board, 43 City Hall, Boston 8, Mass. December 1953. 21 *pp.*

This statement lists as the aims of the Planning Board: promoting new construction, protecting good development, correcting deficiencies, and adapting to the needs of the future, and it summarizes recommendations for attaining these goals. The pamphlet is designed for public enlightenment, and the more technical phases can be found in a *Technical Supplement* also available at the offices of the Planning Board.

State Building Construction Code Applicable to Multiple Dwellings

New York State Building Code Commission, 1740 *Broadway, New York* 19, *N. Y. December* 15, 1953. 132 *pp.*

The Multiple Dwellings Code completes the Commission's rules and regulations for all types of residential building, and augments the one- and two-family dwelling code previously promulgated. Nonresidential building will be covered by a third portion of the code now in preparation. The residential requirements of the code cover space, structure, fire safety, and equipment—that is, they aim to establish reasonable safeguards for the safety, health, and welfare of occupants.

The significance of these residential regulations is that they represent completion of pioneering code-writing work under the "performance standards" mandated by the Legislature through the State Building Code Law, and that they provide all municipalities of the state, at their option, with rules and regulations covering 88% of all new projects on which permits are issued (percentage based on construction records for first ten months of 1953).

Guide Book, 1954 Metropolitan St. Louis Area Development

Metropolitan Plan Association, Inc., 915 *Olive St., St. Louis, Mo. December* 1953. 43 *pp.*

This Guide Book summarizes the recommended activities and proposals for improvement in airports, traffic, transit, sewers, housing, zoning, economic status, etc., in the St. Louis Metropolitan Area. The counties of St. Louis, St. Charles, and Jefferson in Missouri, and St. Clair, Monroe, and Madison in Illinois, are included in the study along with the City of St. Louis. Intercommunity organization and cooperation are stressed as necessary ingredients to achievments of the desired ends.

Needed Urban and Metropolitan Research

By Donald J. Bogue. Scripps Foundation, Miami University, Oxford, Ohio. 1953. 88 *pp.* $1.25.

Unique in that it raises many questions and answers few, this monograph suggests informally some of the more important types of information needed about municipal areas, as well as some specific research proposals. The volume is an abstract of discussions at the Seminar in Population, Urbanism, and Ecology conducted at the University of Chicago last spring. Among the contributors are a housing administrator, two planners, a geographer, and several sociologists.

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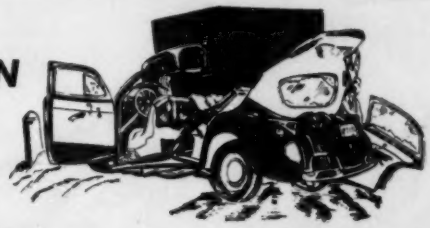

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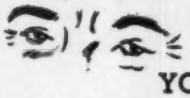

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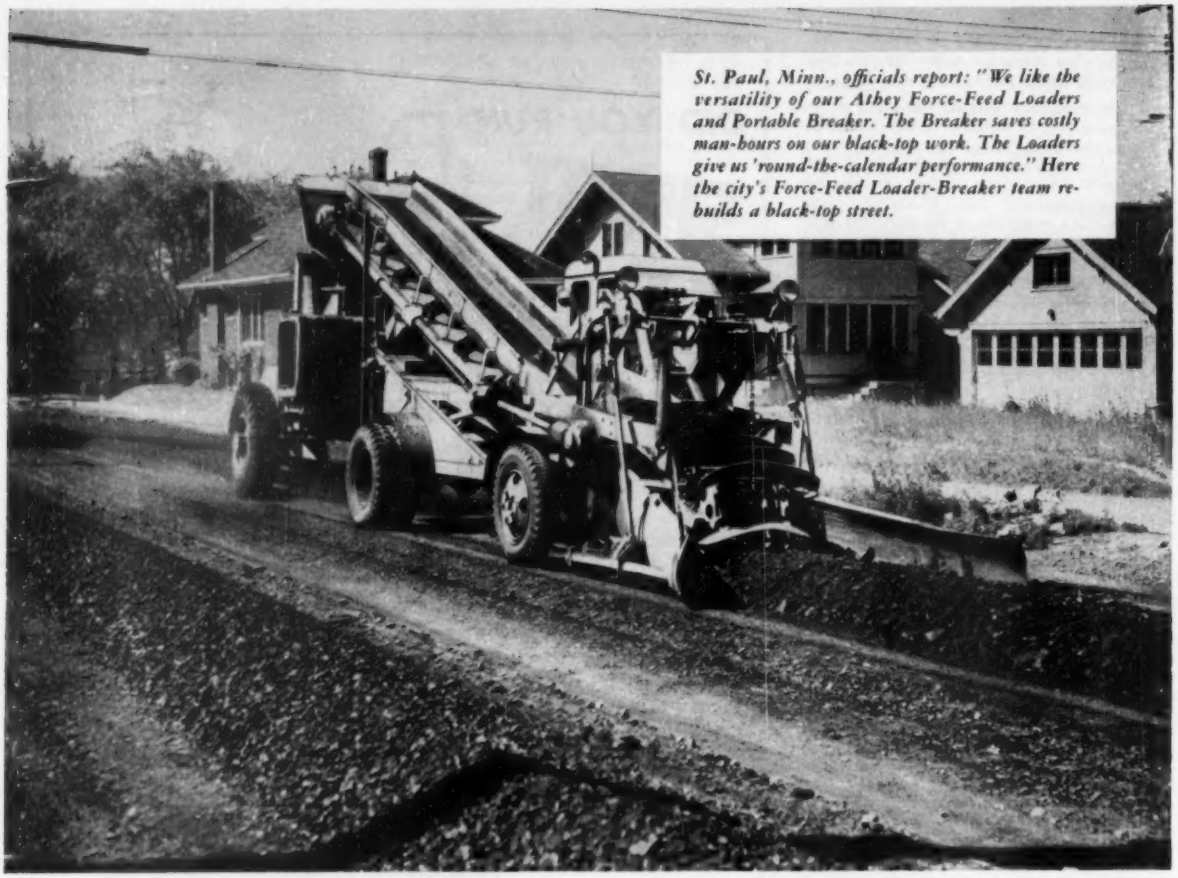

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Recommendations on Government Housing Policies and Programs

A Report of the President's Advisory Committee on Government Housing Policies and Programs. December 1953. 377 *pp. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington* 25, *D. C.* $1.

The President's Committee recommends action in the following areas: (1) A vigorous attack on slums and a broad effort to prevent the spread of slums; (2) the effective maintenance and utilization of existing houses; (3) a steady increase in the volume of building of new houses; (4) special assistance for families of low income, and (5) reorganization of the Housing Agency itself for greater efficiency and economy.

The reports of the Subcommittees appointed by the Advisory Committee constitute the five appendices to the report. Their recommendations and findings were reviewed and in some cases modified by the full Advisory Committee. The minor committees were on FHA and VA Housing Programs and Operations; on Urban Redevelopment, Rehabilitation, and Conservation; on Housing for Low-Income Families, on Housing Credit Facilities, and on Organization of Federal Housing Activities of the Federal Government.

The English New Town

By Henry Bruere. Bowery Briefs No. 7 *of The Bowery Savings Bank,* 110 *E.* 42*nd St., New York* 17, *N. Y. December* 1953. 30 *pp.*

Feeling that in Britain's policy of attracting industry to new communities there may be some stimulus to constructive thinking by Americans officially concerned with housing matters and especially by the government mortgage insurance agencies and the institutions financing such insured mortgages, the Bowery Savings Bank has taken this means of calling attention to the British experiment. This attractive booklet deals especially with the new town of Crawley, telling of the organization of the Development Corporation, the plan of the town, how industry was attracted, and how the community was financed.

Town and Country Planning Summer School

University of Bristol, 1953 *Report of Proceedings—Published under the auspices of the Town Planning Institute,* 18 *Ashley Place, London, S.W.* 1, *England.* 119 *pp.* 5 *shillings.*

Included in the report are the following lectures, each followed by notes on subsequent discussions: Central Areas: Some Aspects of Size, Function and Design, by Professor Sir William Holford; Economic Housing Layout, by J. L. Womersley; Planning in Australia, by Professor Denis Winston; How Far Can a Development Plan Assist Rural Development?, by R. L. Stirling; and Population Movements Into the Outer Suburbs of Large Cities—Measurement and Prediction, by Collin Clark.

Summaries of other discussion groups cover sessions of Nature Conservation, Townscape, Community Centers, Technical Aspects of Comprehensive Development, Road Passenger Transport Needs.

Tenant Relocation Report

A Report by the New York City Planning Commission, 2700 *Municipal Building, New York* 7, *N. Y. Adopted January* 20, 1954. 79 *pp.* 8 *Maps. Available from: Miss Pauline J. Malter, Secretary.*

This pioneering report, prepared by the staff of the New York City Planning Commission, stirred vigorous controversy over its findings and recommendations. The Commission members themselves split 4 to 3 over the issues drawn. (See page 166 of this issue.)

The report contains four parts: The Relocation Problem in New York City; The Housing Situation — Background of the Relocation Problem; The Availability of Land Capacity for New Housing; and Administration of Relocation.

Other Reports Received

Administration and Government

ALASKA — Directory of Alaskan City Officials 1953-1954. League of Alaskan Cities, Box 400, Anchorage, Alaska. Unpaged.

GENERAL—A Short International Bibliography of Public Administration. Published by Columbia University Press, 2960 Broadway, New York 27, N. Y. June 12, 1953. English, French, and Spanish. 20 pp. 30 cents.

Airports and Aviation

PHILADELPHIA, PA.—International Air Terminal. A Great New Air Terminal Serving an Ever Greater Philadelphia. Illus. Unpaged.

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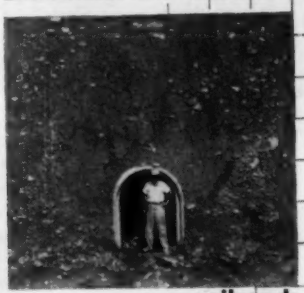

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Annual Reports

WINDSOR, CONN.—Annual Report. An Account of Town Government Operations for the Fiscal Year Beginning July 1, 1952, and ending June 30, 1953. Illus. 36 pp.

LOS ANGELES, CALIF.—45th Annual Report of the Board of Harbor Commissioners. Illus. Tables. 88 pp.

Finance and Taxation

CHATTANOOGA, TENN.—Auditor's Report for the Fiscal Year Ended June 30, 1953. L. Lewis, Jr., and Associates, Volunteer Bldg., Chattanooga, Tenn. Tables. 190 pp.

NEW YORK, N. Y.—22nd Annual Report of the Citizens Budget Commission for the Year Ending December 31, 1953.

Laws and Legal Decisions

VIRGINIA — Representative Ordinances Regarding the Regulation of Dogs. Report No. 361. December 1953. League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. 10 pp.

Personnel

CONNECTICUT—Public Welfare in Connecticut. An Explanation of the Social Welfare Programs Available to Connecticut Citizens. By John J. Cronin and Joan B. Davis. The University of Connecticut Bulletin. Volume 49, No. 3. December 1953. 47 pp.

PHILADELPHIA, PA.—A Comprehensive Retirement Program for the Employees of the City. Available from Bureau of Municipal Research, 311 South Juniper St., Philadelphia 7, Pa. October 1953. Graphs. Tables. 24 pp. plus Appendix.

Pest Control

NEW JERSEY—Proceedings of Mosquito Association. Available from Secretary, New Jersey Exterminating Association, College of Agriculture, Rutgers University, New Brunswick, N. J. Tables. 217 pp. $2.

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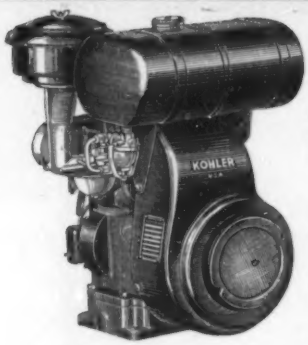

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Planning, Housing, and Zoning

BROOKHAVEN, N. Y.—Progress Report 1953. Submitted by the Planning Board of the Town. Illus. Maps. Unpaged.

BUFFALO, N. Y. — A Story of Buffalo's Housing. Second Annual Report. Available from Buffalo Municipal Housing Authority, 901 City Hall, Buffalo 2, N. Y. Illus. Tables. 37 pp.

ENGLAND—Year Book of the Town Planning Institute, 18 Ashley Pl., London, S.W. 1. November 1953. 181 pp. Four Shillings.

FAIRBANKS, ALASKA—Comprehensive Plan. Part I. R. W. Beck and Associates, Public Utility Analysts and Engineers, Seattle, Wash. Illus. Maps. Tables. Graphs. 85 pp.

PATERSON, N. J.—Future Land Use. A Section of the Master Reference Plan for Paterson — Part Two — Business, Industry, Zoning. Prepared by the Staff of the Paterson Planning Board under the direction of C. Earl Morrow, Planning Consultant. Graphs. Maps. 44 pp.

SACRAMENTO, CALIF.—The Annual Report of the Sacramento City Planning Commission, for the Fiscal Year July 1, 1952, to June 30, 1953. Tables. 15 pp.

SANFORD, FLA.—Sanford Gateway to Good Living and Industrial Opportunity. A Brief, Interesting, Factual and Pictorial Report of Progress During the Fiscal Year Beginning October 1, 1952, and Ending September 30, 1953. Illus. Newspaper form. Unpaged.

Public Health

MASSACHUSETTS — Proud Heritage, 1886-1953. A Review of Lawrence Experiment Station, Past, Present, Future. Copies available from Clarence I. Sterling, Jr., Chief Sanitary Engineer, Department of Public Health, State House, Boston 33, Mass.

NEW YORK, NEW JERSEY, CONNECTICUT—Interstate Sanitation Commission, 1953. Obtainable from Interstate Sanitation Commission, 110 William St., New York 38, N. Y. Illus. Tables. Graphs. Appendix. 33 pp.

Public Works

SAN FRANCISCO, CALIF.—Annual Report of the Department of Public Works for Fiscal Year Ending June 30, 1953. Illus. Maps. Tables. Appendices. 132 pp.

HOLLAND, MICH. — 59th Annual Report. 1952-1953. Board of Public Works

for Fiscal Year Ending June 30, 1953. Illus. Tables. Graphs. 39 pp.

Refuse

GENERAL—Standard of the National Board of Fire Underwriters for Incinerators as Recommended by the National Fire Protection Association. NBFU Pamphlet No. 82. October 1953. Obtainable from National Board of Fire Underwriters, 85 John St., New York 38, N. Y. 15 pp.

Sewerage and Sewage Treatment

WASHINGTON—Legal Aspects of Sewerage and Sewage Disposal, by Ernest H. Campbell. Information Bulletin No. 160. December 20, 1953. Washington Municipal Bulletin, Published by the Association of Washington Cities in Cooperation with the Bureau of Governmental Research and Services, University of Washington, Seattle 3, Wash. 15 pp.

Street Construction and Maintenance

GENERAL — Highway Research Abstracts. Thirty-third Annual Meeting. Volume 23, No. 11. December 1953. Published by Highway Research Board of the National Research Council, National Academy of Sciences Bldg., 2101 Constitution Ave., Washington, D. C. 66 pp.

——Flexible-Pavement Design. 1953. Bulletin 80. Published by Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. 19 pp. 30 cents.

Traffic

NEW YORK, N. Y.—Port Authority Preliminary Annual Statement. Released January 14, 1954. The Port of New York Authority, 111 Eighth Ave., New York 11, N. Y. Tables. Mimeo. 40 pp.

——Annual Report 1953 of the Triborough Bridge and Tunnel Authority, Triborough Station, Box 35, New York 35, N. Y. Tables. Unpaged.

Water Supply and Treatment

GEORGIA — Annual Report on Georgia Water Pollution Control in 1953. Department of Public Health, Atlanta, Ga. Mimeo. 11 pp.

PASADENA, CALIF.—40th Annual Report of Water Department, 1952-53. Illus. Tables. Graphs. 67 pp.

TAUNTON, MASS.—77th Annual Report of the Water Commissioners for the Year 1952. Tables. Graphs. 23 pp.

WASHINGTON—Legal Problems and Responsibilities in Administering Water Systems, by Ernest H. Campbell. Information Bulletin No. 162. Association of Washington Cities, 250 Smith Hall, University of Washington, Seattle 5, Wash. January 15, 1954. 21 pp.

GENERAL—AWWA Hypochlorite Specification Available. Published by the American Water Works Association, 521 Fifth Ave., New York 17, N. Y. 7 pp. May be obtained upon advance remittance of 20 cents.

——"Your Water Supply," manual intended for distribution by local water utilities to their customers. Prepared by the American Water Works Association, Inc., 521 Fifth Ave., New York 17, N. Y. Illus. 12 pp.

Canton Area—250,000

THROUGH a regrettable clerical error, in reporting the achievements of the "All-America Cities" award winners in our February issue, the population of Canton, Ohio, was much under-stated. Calling THE AMERICAN CITY's attention to this mistake, W. A. Porterfield, vice-president in charge of sales promotion, of The Union Metal Manufacturing Co., writes:

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The 1954 Institutes for Commercial and Trade Organization Executives

THE JANUARY *Newsletter* of the Chamber of Commerce of the United States presents the following lists of the six Institutes for commercial and trade organization executives to be held during the coming summer.

Over the years these institutes have proved of great value to persons engaged in chamber work, as well as those who contemplate entering the field. The fundamentals of organization and management, the latest trends and developments, an opportunity to exchange ideas and experiences with others; these and more are available to those who attend.

June 20 to 26—
Southeastern Institute for Commercial Organization Executives
University of North Carolina, Chapel Hill, North Carolina
Ed H. Cherry, Manager
619-21 Volunteer Building, Atlanta 3, Ga.

June 27 to July 3—
National Institute for Commercial and Trade Organization Executives
Chicago Lake Shore Campus, Northwestern University, Chicago, Ill.
S. Spencer Shaw, Manager
830-34 First National Bank Building. Chicago 3, Ill.

July 11 to 17—
Rocky Mountain Institute
Montana State University, Missoula. Mont.
J. R. Patt, Secretary-Treasurer
1310 Rand Tower, Minneapolis 2. Minn.

July 11 to 17—
Western Institute for Chamber of Commerce and Trade Executives
Stanford University, Palo Alto, Calif.
Lisle L. Berkshire, Manager
333 Pine Street, San Francisco 4, Calif.

July 18 to 24—
Southwestern Chamber of Commerce Institute
Adolphus Hotel, Dallas, Texas
James G. Roberts, Manager
300 Dallas Chamber of Commerce Building, Dallas 2, Texas.

August 1 to 7—
Northeastern Institute for Commercial and Trade Organization Executives
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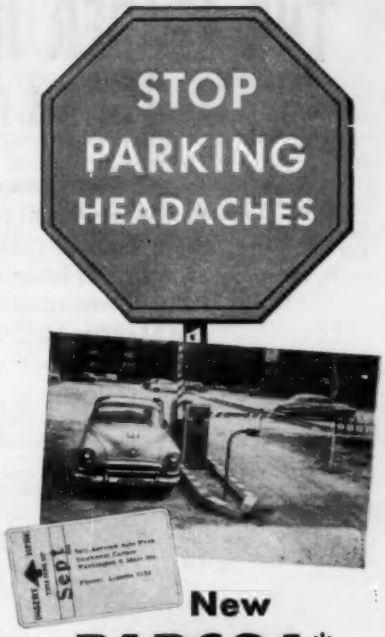

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Now you can solve parking problems in your community . . . relieve congestion and provide revenue—and do it automatically, without attendants.

The amazing new PARCOA system does the job safely, economically and dependably. The simple electrical mechanism controls entrance and exit gates, actuated by card-keys issued only to legal parking customers.

Low in first cost. Easy to install. Minimum maintenance. No attendants needed. Controlled capacity with 100% collection assured. Coded card-key can be changed as desired. System pays for itself quickly.

Write for illustrated brochure and name of nearest distributor.

*Your choice of controls (coin, card, token or any combination) makes this system readily adaptable to individual requirements.

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Division of Johnson Fare Box Company
Specialists in revenue collection since 1909

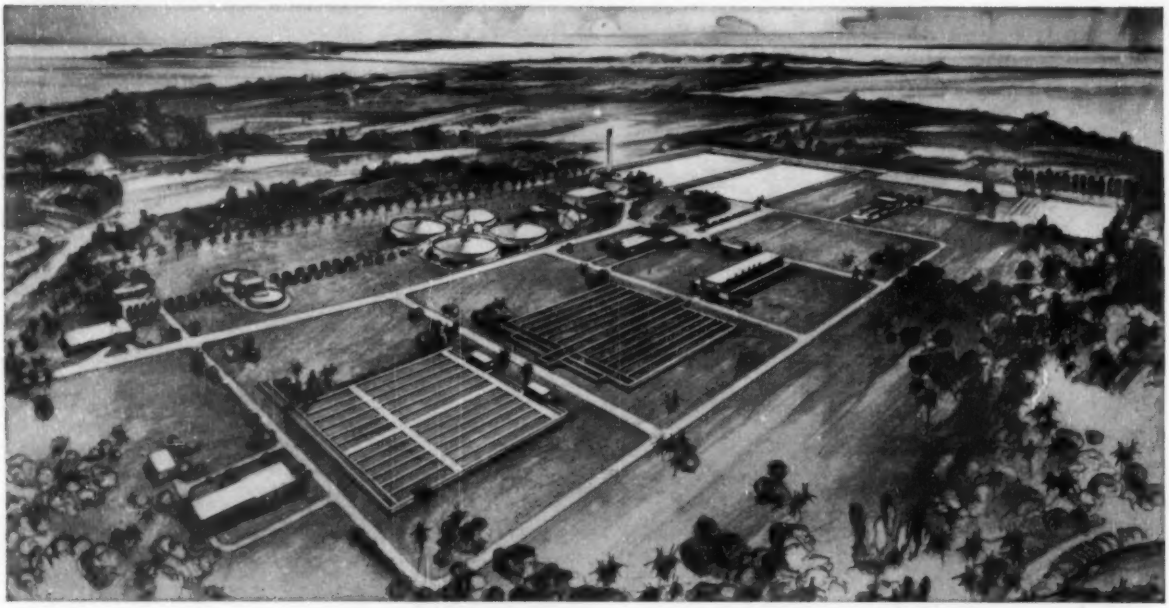
33 No. La Salle Street, Chicago 2, Illinois

Sales and Service Offices in Principal Cities

THE LEADER IN SEWAGE SLUDGE DISPOSAL

specified for Miami Project

Two C-E Raymond Incinerators will be used at Miami's new sewage treatment plant, located on Virginia Key, just across Biscayne Bay from Miami proper. Treatment plant design was by Metcalf and Eddy, a member of Miami Sewer Project Associates. Other members are Rader Knappen Tippetts Engineering Co. and Maurice H. Connell & Associates, Inc.



In keeping with the thoroughly modern equipment to be used in this new plant, the filtered sludge will be processed in two C-E Raymond Flash Drying and Incineration Systems. The sludge will be dried from 75% to 8% moisture, and then incinerated to a sterile ash. High-temperature deodorization will eliminate odors from the stack gases. Each C-E Raymond Flash Dryer will process 4½ tons of filter cake per hour, which is equivalent to an evaporation rate per unit of 6,576 pounds.

The system can be easily adapted to the production of fertilizer by the addition of dried sludge handling equipment. This flexibility is just one of the many reasons why the aggregate capacity of C-E Raymond Equipment installed, under construction or on order, is higher than all other heat methods combined.

What has been right for so many other communities will be right for you, too. Let a C-E Raymond specialist demonstrate how efficiently and economically this leading system can end your sludge disposal problems.

B-69E

COMBUSTION ENGINEERING, Inc.

RAYMOND DIVISION

1315 North Branch Street, Chicago 22, Illinois

Western Office: 510 W. Sixth St., Los Angeles 14, Cal. • Eastern Office: 200 Madison Ave., N. Y. 16, N. Y.

ALSO FLASH DRYING AND INCINERATION SYSTEMS FOR INDUSTRIAL WASTE DISPOSAL

Delaware County Inventories Public Recreation-School Properties

A USEFUL FIRST STEP in planning for future recreation and school facilities has just been completed by the Delaware County Planning Commission through the issuance of its report, "Preliminary Inventory of Public Recreation and School Areas."* This report lists the name, location and acreage of each public recreation area and school property. It was compiled by the County Planning Commission in cooperation with the County Park Board and the Office of the County Superintendent of Schools, and with the assistance of the Secretaries and other officials of the County's municipalities and school districts.

The tabulations in the report reveal that there are currently 247 public school and recreation properties totaling 1,983 acres in Delaware County. School districts own 951 acres in 140 sites, and public recreation areas represent 107 properties totaling 1,032 acres.

The County has 2.2 acres in parks, playgrounds, and other public recreation properties for each 1,000 persons of the estimated current population of 475,000. This compares with the generally accepted standard of 10 acres of public recreation per 1,000 people. There are about two acres of school land per 1,000 people in Delaware County, the report shows.

* Available from Delaware County Planning Commission, Court House, Media, Pa.

Dunedin, N. Z., Exempts Improvements from Taxation

AS A FOOTNOTE to the statement by Professor McDougal on page 11 of the February issue, recent progress in site-value taxation in New Zealand is worth noting. On October 31, 1953, the ratepayers in that Dominion's fourth largest city—Dunedin—voted to levy future municipal taxes on land values only. Dunedin thus joins more than two-thirds of the municipalities of New Zealand—including Wellington, capital of the Dominion—in freeing buildings and other real estate improvements from local taxation.

Broken Bow, Nebr., Has New Mercuries

LAST YEAR, Mayor Massie, of Broken Bow (population 3,340), turned on the new mercury-vapor nonballast street-lighting system. This ceremony was preceded by a day commemorating the completion of the project by Larry Clark, superintendent of the Municipal Utilities Department. More than 500 persons toured the plant and enjoyed free coffee and doughnuts.

They learned that the first power plant in Broken Bow was built in 1915, but that in 1945 the city, having acquired 79% of the business, purchased the Consumers Public Power District properties. The original Light Department investment has grown from $10,000 to today's value of $750,000, with outstanding bonds amounting to $10,000, which was paid in January 1954.

The new street-lighting equipment consists of 75 Line-Material luminaires, whose mercury lamps operate without ballasts, and related equipment. Longer lamp life with lower power costs, due to the elimination of ballast losses, are claimed for the new system.

Exclusive! HOBBY-HORSE SWING SET

BURKE PLAYGROUND EQUIPMENT

Complete line of playground, home, playschool play devices.

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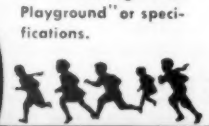
* GLIDER
* CLIMB-A-ROUND

Write for special literature catalog, price list, booklet "Planning Your Playground" or specifications.



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THE J. E. BURKE PLAYGROUND EQUIPMENT CO.

Factories at FOND DU LAC, WISCONSIN
BOX 986, NEW BRUNSWICK, N. J.

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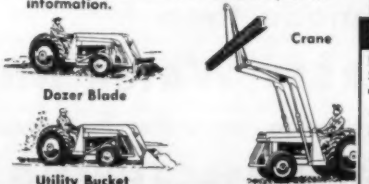
HAS THIS HANDY CONCRETE BUSTER ATTACHMENT

Here's an attachment to the Davis Loader that handles toughest jobs in real man-saving time. This, plus other year-around attachments, and such exclusive features as 12-minute attachment, box-frame construction, oil filter, adjustable arms that keep bucket in correct position to ground, plus many others, make it your best loader buy. See your dealer, or send coupon for information.



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Send me literature on the Davis Loader_____, and Concrete Buster Attachment_____ to fit a _____ model tractor.

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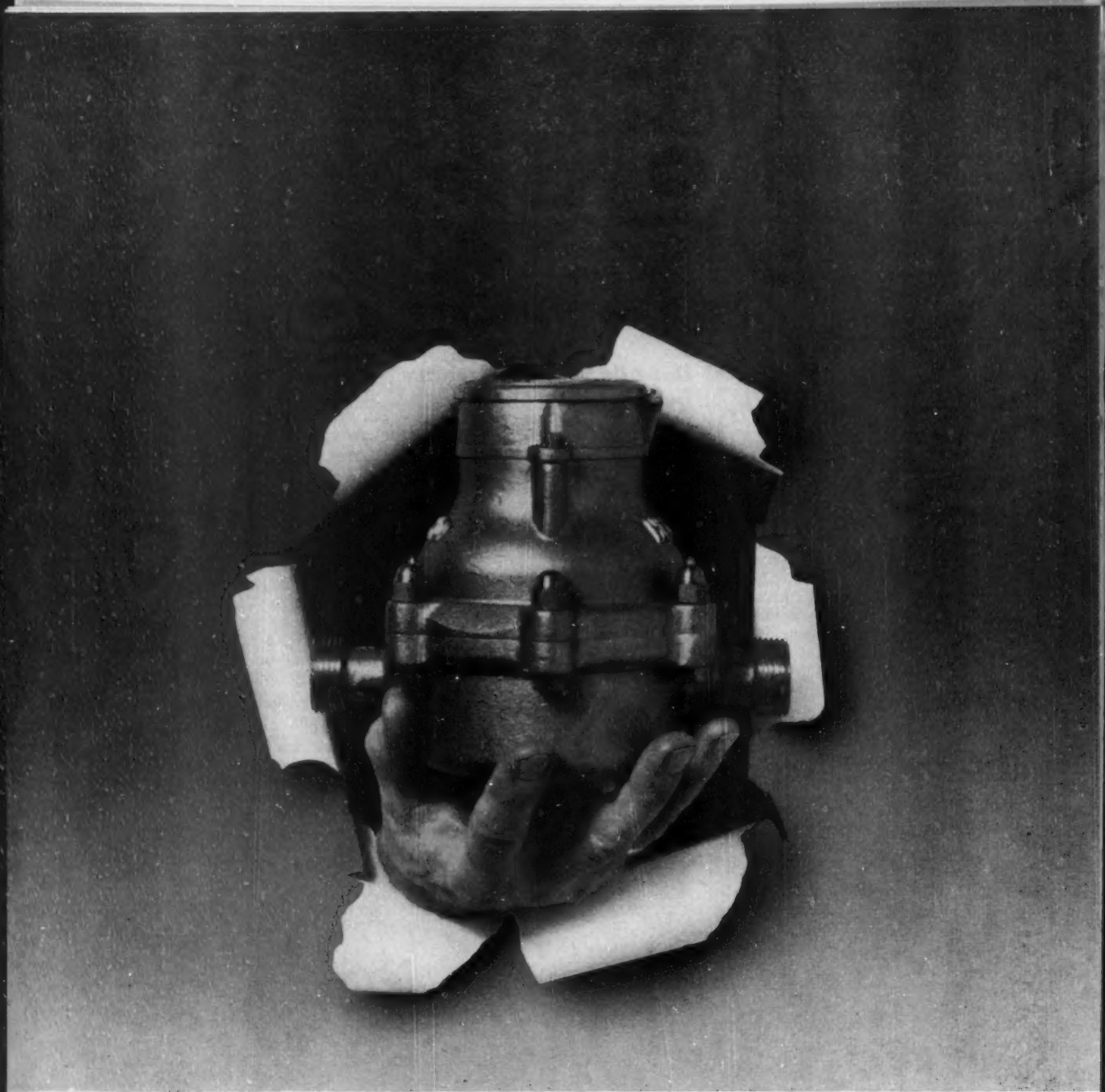

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Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities

Merckel to Head Wallace & Tiernan, Inc.

F. G. Merckel has been elected president of Wallace & Tiernan Inc., a new organization formed by the recent merger of Wallace & Tiernan Co. Inc., 25 Main St., Belleville 9, N. J., and the Novadel - Agene Corp. According to M. F. Tiernan, chairman of the board, other officers elected included R. M. Jackson, executive vice-president and treasurer, and G. D. Peet, vice-president in charge of Product Engineering and Development.

F. G. Merckel R. M. Jackson G. D. Peet

Mr. Merckel, an engineer by training has been with the Wallace & Tiernan group in various executive and sales capacities for some 35 years, last serving as president of W. C. Hardesty Co. Inc., a Wallace & Tiernan subsidiary. Well known throughout all the fields of Wallace & Tiernan and Novadel activities, he brings to his new job a broad experience in management, sales, research and legal matters.

Mr. Jackson, former treasurer, has been associated with the organization for over 20 years. While the bulk of his training has been in the financial field, he has also acquired substantial experience in all phases of business management.

A valued member of the management team, Mr. Peet has been with Wallace & Tiernan almost since its inception. He has served as chief engineer and as an officer of subsidiary companies, and has made numerous contributions to company operations in the engineering and management fields.

Responsible to Mr. Merckel in staff capacities will be: Dr. H. C. Marks, director of laboratory research; David Crampton, chief chemical engineer; J. C. Cornwall, secretary of the corporation; and T. T. Quigley, assistant to the president and operational analyst.

The new director of laboratory research, Dr. Marks, formerly in charge of chemical research for Wallace & Tiernan, is a leading member of the American Chemical Society. Mr. Crampton, whose responsibilities will include all chemical plant design, engineering and construction, as well as direct supervision of the Belleville Chemical Plant operations, is a graduate professional engineer. Both men have been with the organization for more than 20 years.

An attorney, Mr. Cornwall boasts a 7-year association with Wallace & Tiernan. He will continue to handle legal matters plus many questions of management policy.

Mr. Quigley, with the firm for some 10 years, served as advertising and sales promotion manager, a position which will be taken over by O. S. Porter.

According to Mr. Tiernan, Wm. J. Orchard, long time general manager of Wallace & Tiernan and vice-president of Novadel, who reached his 65th birthday recently, will remain on the Board of Wallace & Tiernan but will retire from active management. Mr. Orchard has for many years been a leader in such technical associations as the American Water Works Association, Federation of Sewage and Industrial Wastes Association, American Public Health Association and others, and is expected to continue his activities in these fields as well as his many civic responsibilities.

Stops Rust

The president of Metal-Cladding, Inc., Sherwood C. Moss, tells of a process that will bring relief from corrosion and rust on water storage tanks. This corrosion protection is so effective, he says, that periodic repainting is eliminated, and inspection is unnecessary for the first 20 years.

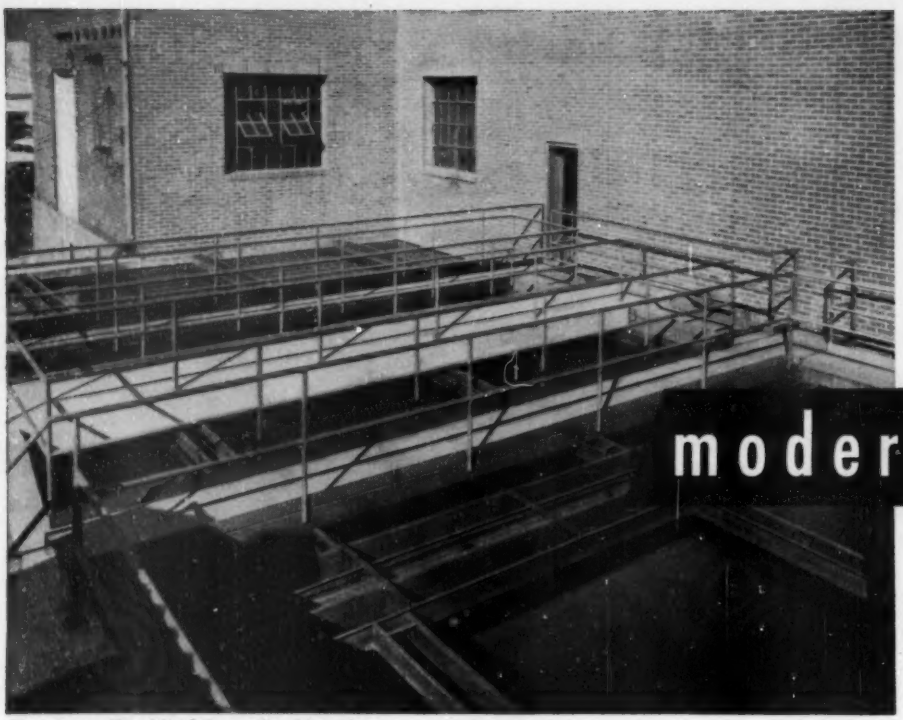
The new process will work on any elevated water tank, even one that is already heavily pitted and subject to condemnation. It combats corrosion both above and below the water line.

The M-C-I system involves the application of pure metallic zinc or aluminum, five to ten times thicker than galvanizing, by trained field crews, using specialized procedures. Once applied, this coating is neither affected nor damaged by ice, and has a life expectancy of 50 years and more.

City officials are offered case histories, job surveys and literature explaining the process, by Metal-Cladding, Inc., 128 Lakeview Ave., Buffalo 1, N. Y. Write directly, or use the Post Card on the colored page in this section. Circle No. 751.

New Address for Golden-Anderson

General offices of the Golden-Anderson Valve Specialty Co., Pittsburgh, Pa., have been moved to larger quarters at 1232 Ridge Ave., according to a recent announcement. The company also reports enlarging its engineering staff and increasing its facilities for the producton of cushioned water valves.



HOW NORTH KANSAS CITY modernized ITS IRON REMOVAL PLANT

Photo courtesy City of North Kansas City, Missouri

TO *triple* the 1912 rate of an old-fashioned settling basin and two filters could be a problem—and quite expensive.

Consulting Engineer Charles A. Haskins, solved it very economically. Two compact, modern Permutit Precipitators were built into the *old* settling basin. Operating on the highly efficient sludge-blanket principle, these Permutit Precipitators assure maximum operating economy.

The results of this modernization—detailed in the table below—speak for themselves:

- Total Iron reduced from 5.0 to 0.1 ppm.
- Manganese reduced from 0.2 ppm to essentially zero.
- Turbidity reduced from 50 to only 3 ppm—permits 19 hour per day filter runs with washing only once every 5 days!
- Hardness reduced to level desired.

For full details on the Precipitator write to THE PERMUTIT COMPANY, Dept. AC-3, 330 West 42 St., New York 36, N. Y., or to Permutit Company of Canada, Ltd., 6975 Jeanne Mance St., Montreal.

Registered Trade Mark

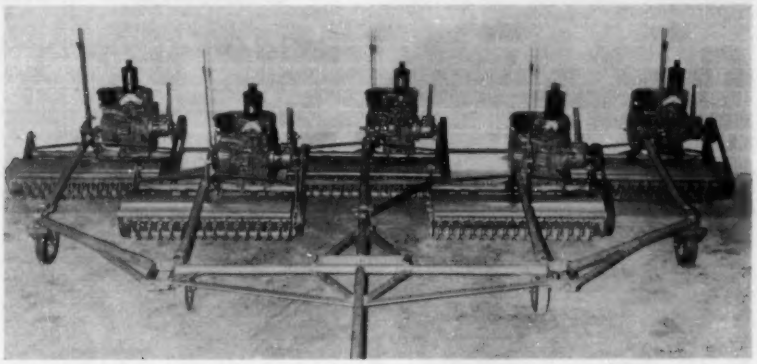
Water Analysis Report Before and After Conditioning

		PPM as	Raw Water from wells before aeration	Precipitator effluent (unfiltered)
CATIONS	Calcium (Ca++)	$CaCO_3$	145	55
	Magnesium (Mg++)	$CaCO_3$	103	75
	Sodium (Na+)	$CaCO_3$	108	105
ANIONS	Alkalinity: Bicarbonate (HCO_3−)	$CaCO_3$	190	42
	Alkalinity: Carbonate (CO_3−−)	$CaCO_3$	0	24
	Alkalinity: Hydroxide (OH−)	$CaCO_3$	0	0
	Chloride (Cl−)	$CaCO_3$	35	35
	Sulfate (SO_4−−)	$CaCO_3$	146	139
	Total Hardness	$CaCO_3$	248	130
	Alkalinity A (Methyl Orange)	$CaCO_3$	190	66
	Alkalinity B (Phenolphthalein)	$CaCO_3$	0	12
	Free Carbon Dioxide	CO_2	16	0
	IRON (total)	Fe	5.0	0.1
	Silica	SiO_2	16.8	13.0
	MANGANESE	Mn	0.2	0.0
	TURBIDITY (after shaking)		50	3
	Fluorides	F	0.5	0.4
	Color		Turbid	5
	pH		7.3	9.5
	Total Hardness (as $CaCO_3$)	Result in grains per U.S. Gal.	15	7.6

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS...

PERMUTIT®

Cuts Larger Areas of Grass, Weeds and Leaves



Equipped with loosely-hung knives, the Hammer-Knife mowers can be operated successfully in areas filled with rocks, tin cans, bottles and other debris.

Towing these Gang Hammer-Knife Mowers with any jeep or tractor, park and airport officials can shred weeds, stalks and stubble, chop light brush and mulch leaves, providing neat, well-kept grounds in less time. The mowers are quickly adjusted to a wide range of cutting heights. They are equipped with lightweight knives that simply fold back when encountering rocks and trash.

The free-swinging, pivoted knives stand straight out, their tips traveling at speeds greater than 70 mph. They cut down on the front, pulling in tall grass and weeds, shredding them, then spreading them evenly on the ground. Grass is never sheared; cuttings are never windrowed.

Of particular interest to city officials is the low cost of maintaining these mowers. The knives bend before they break and may be straightened several times. Servicing is simple, and replacement of knives, inexpensive.

One, two, three and five gang Hammer-Knife Mowers are available. The five gang mowers are reported to operate at 60 hp, cutting a 19-foot swath.

Details on these fast-cutting units will be sent by C. W. Mott Research Engineers, 4015 Eberly Ave., Brookfield, Ill. Write directly, or use the Post Card on the colored page in this section. Circle No. 748.

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desires to represent manufacturers of Water Purification and Sewage Disposal Equipment, Pipe, Fittings, Valves, Hydrants and Water Works Specialties in all or any part of the territory comprising the States of Minnesota, North Dakota, South Dakota and Montana. Capable and fully experienced in the water works and sewage fields. Write:

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CIRCUL-AIR
THE AIR CONDITIONING
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THE *New* AQUA
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" . . . greatly improved . . . no needle nervousness . . . pinpoint accuracy. The new Aqua has our unqualified approval!"
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Higher Pressure and LESS MAINTENANCE

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STREET FLUSHER
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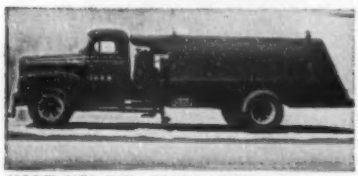
THE ROSCO DESIGN assures a maximum delivery ratio between horsepower and pump capacity. That's because the flusher is equipped with an enclosed impeller, self-lubricated, centrifugal pump—hydraulically balanced and mounted integrally with the power unit. End thrust to the engine crankshaft is completely eliminated. It's this design that provides maximum pressure at the flushing shoes. An important money-saving feature is that the self-lubricated pump *eliminates the need for constant daily maintenance.*

OTHER MODELS include a 2-wheel flusher . . . Model MFR for truck mounting . . . Model MBC for towing behind a truck.

YOUR ROSCO DEALER will show you how Rosco equipment can help safeguard your community's health in the most efficient way. Standard models in 1200, 1600, or 2100 gallon capacities. *Send for bulletin 54-2.*



MODEL MTA WITH CANOPY TOP

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3118 SNELLING AVE. • MINNEAPOLIS 6, MINN.

Purchasing News

Stabilizes Soils and Waterproofs Foundations

What to do about the rising water table, a constant threat to good street and highway construction and foundation stability generally, now has an asphalt-membrane answer. Applying this asphalt is as easy as spraying a street.

The asphalt is a catalytically blown asphalt, or more familiarly, a "cat" asphalt. Widely used as a principal material for controlling seepage, it was originated and developed by the Lion Oil Co., El Dorado, Ark., and has been licensed under Patent No. 2450756 to producers of asphalt throughout the U. S. and Canada.

This "cat" asphalt membrane has proved effective in the stabilization of natural soils under highways and airfield pavements by enveloping or "wrapping up" these soils. The membrane acts as a capillary barrier that prevents the stabilized soils from becoming saturated with water and losing their stability. It is also effective in preventing loss of water from spray ponds used in power plants and other industries. When the pond has been lined with membrane, seepage is no longer a problem.

The same asphalt membrane has proved useful for erosion control in canals and irrigation ditches. To aid in preventing erosion, the membrane is generally reinforced with an asphalt-penetrated macadam cover. More recently it has been used to prevent erosion in highway drainage ditches. Earth check dams, covered with the asphalt, retard the water to a non-eroding velocity, thus preventing damage.

Earth dams, too, have been protected with this asphalt membrane. It can be used on either the upstream face of the dam, or on the base under the fill.

American Vacuum Leaf Loader
Solves your leaf or clean-up problem

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LEAF LOADER DIVISION
American Structural Steel and Tank Co.
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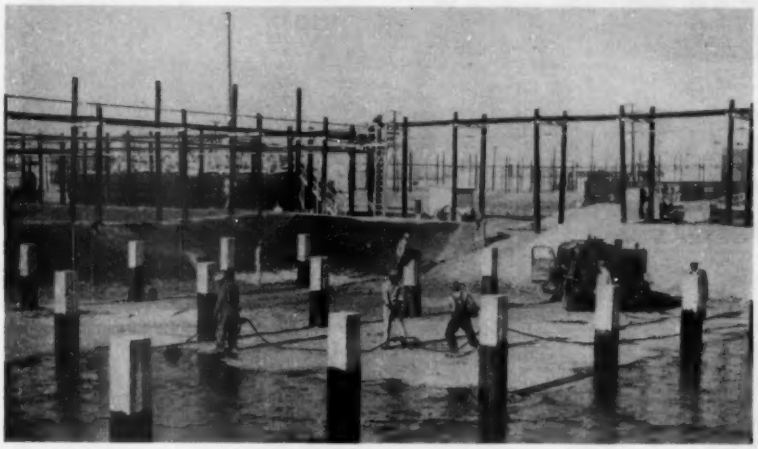
• We will supply enough equipment to clean your sewers, and a man to supervise the operation, on a rental basis.

• No equipment to buy and maintain — rental actually costs less than equipment maintenance.

• Safe domestic defense requires clean, well operating sewers.



There will be no seepage loss from this power-plant spray pond after installation of the water-proof "cat" asphalt membrane lining has been completed.

The membrane can be used to prevent the impounded water from seeping away by placing it over sandy or otherwise pervious material in the reservoir area. Irrigation canals have used the "cat" asphalt membrane to good advantage in preventing loss of water that is needed for the growing of crops.

A detailed description of this "cat" asphalt membrane that explains how it stabilizes soils and waterproofs foundations, is available from the Lion Oil Co. on request, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 743.

for a CLEAN SWEEP

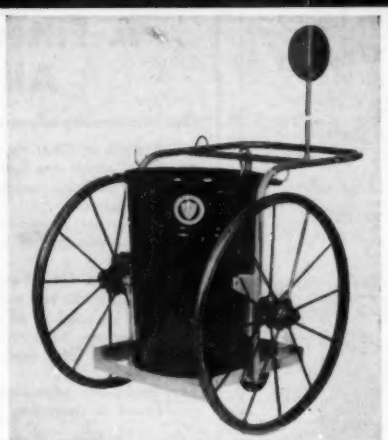
You know this is true: **only hand-pushed brooms get all the dirt.**

For dependable, economical **SERVICE** Tarco "Street Sweepers' Friend" Carriers are **BEST.**

Choice of STYLES: for a **single can** or for **two cans.**

Choice of large wheel TIRING: **pneumatic, solid rubber** or **plain steel.**

Balanced and free-running. Silent can clamp. Safety traffic-warning flag. Full swiveling castor wheels. Level lift sweeper scoop available.



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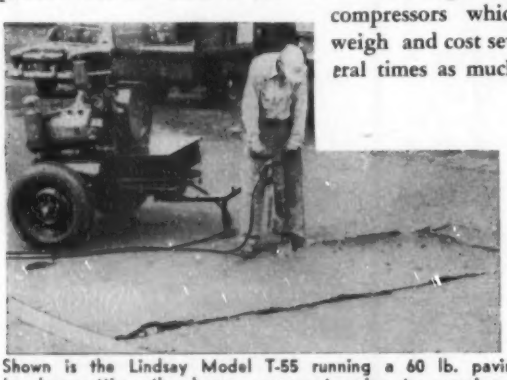
ANOTHER PORTABLE

LINDSAY AIR COMPRESSOR

NOW—you can get an air compressor that will run a medium size paving breaker at full capacity yet is so portable it needs only one or two men (not a whole crew or truck) to get in position and operate. This heavy duty Lindsay Model T-55 is especially designed for rugged digging and drilling. Is priced to meet the budget of the small town as well as the large. This Lindsay compressor will do much of the work often assigned to compressors which weigh and cost several times as much.

QUICK FACTS ABOUT THE LINDSAY MODEL T-55.

- Most portable in its class
- Large storage box for tools
- Torsion spring mounting
- Direct fan cooling



Shown is the Lindsay Model T-55 running a 60 lb. paving breaker cutting the heavy pavement prior to opening a service trench.

P. K. LINDSAY COMPANY
97C Tileston St. Everett 49, Mass.

Your BEST Buy ...regardless of price!

WITT CANS and PAILS

WITT CANS and PAILS are designed and constructed to give you more service for your dollar. They withstand years of hard usage and abuse which wreck the ordinary container. Many WITT CANS and PAILS are still in excellent condition after 10, 15, yes even 20 years or more service. They're guaranteed to outlast 3 to 5 of the ordinary kind. Regardless of price, you get more for your dollar. Buy a WITT!

Compare WITT CAN and PAIL features with others on these points . . .

- STRAIGHT SIDES
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Witt Cans "Originators of the Corrugated Can"

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Has outstanding advantages over sand and quartz media:

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4. Filters out of service less because of shorter wash cycle
5. Better removal of bacteria, micro-organic matter, taste and odor
6. Increased filter output with better quality effluent
7. Not just the top portion, but the entire bed, aids in filtering
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11. Decidedly advantageous for removal of fibrous material as found in swimming pool filters

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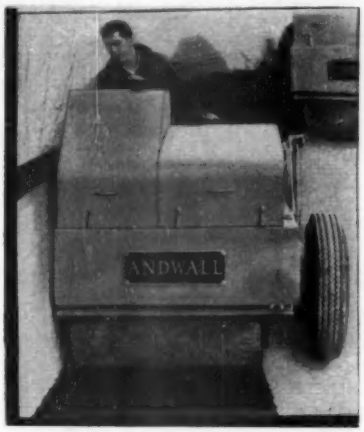
Anthracite Institute Bldg., Wilkes-Barre, Pa.

Purchasing

Provides "Close-to-Curb" Street Surfacing

A new 2-ton roller that will surface streets to within 1¼ inches of the curbing is announced by the Andwall Mfg. Co., Oconomowoc, Wis. Adaptable for trailing behind any truck, the unit is equipped with a powerful hydraulic lift that raises the roller and lowers the pneumatic tires. It is then able to follow the truck from job to job at desired speeds.

The Andwall Roller is said to concentrate its weight on the main roller, and



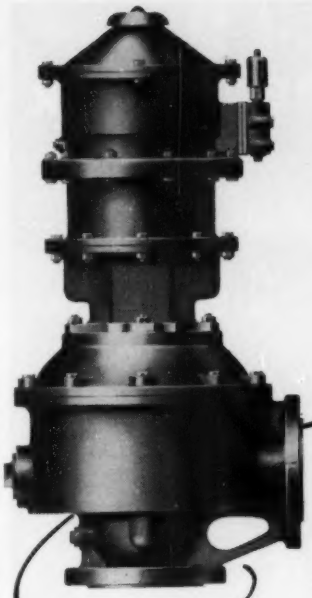
to provide a compaction pressure of 110 pounds per lineal inch. The water drum capacity is 800 pounds, while the tank holds some 220 pounds. Each unit is powered by a 11.2-hp, 2-cylinder air-cooled Wisconsin motor, and operates without gears and complex clutch adjustments.

Additional information may be obtained from the manufacturer direct or use the Post Card on the colored page in this section. Circle No. 768.

Neptune Acquires Revere Corporation of America

Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., well-known manufacturer of water meters, has acquired full interest in the Revere Corp. of America, Wallingford, Conn. According to company officials, Neptune has held a 49% interest in the firm since 1951.

With plants in Wallingford and Meriden, Conn., Revere makes electromechanical instruments for the measurement and control of liquids and temperatures. The company also manufactures electronic toll-recording equipment for highways and turnpikes.



New Simplex Type CCAV Valve. Combination controlled-closing and vacuum-breaking valve.

ONE 4-INCH CONNECTION to your main pipe line...

PREVENTS **surge rupture vacuum collapse**

Why take chances? No matter what the safety factor, surge and hammer can play some dirty tricks . . . rupture lines, blow out packing, fracture valves. And if the line breaks or is drained rapidly, it can collapse from vacuum.

Simplex Type CCAV is a new combination! A controlled-closing and vacuum-breaking valve to protect your lines against these dangers. It's easily installed, moderately priced, positive-acting.

When lines are being filled, Type CCAV Valve vents air to prevent binding, controls transfer time to prevent surge damage. Timing can be quickly set from a few seconds up to well over ten minutes—as dictated by site requirements. If hammer is excessive, Type CCAV automatically discharges water . . . extra protection for costly lines and fittings.

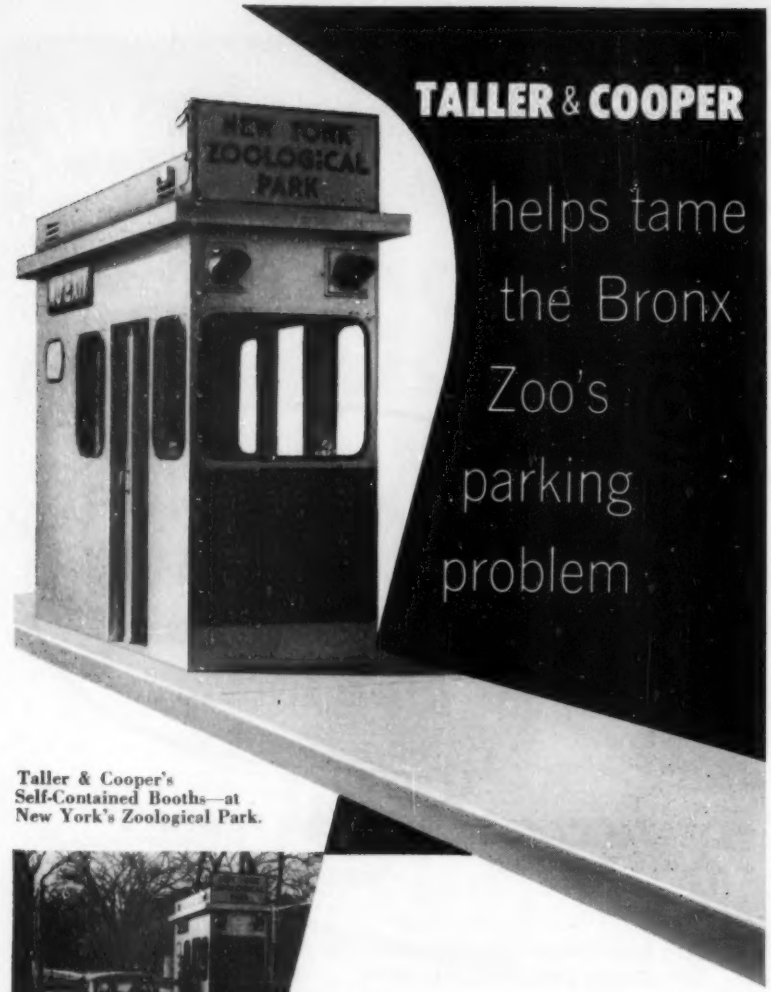
When lines are subject to collapse from rapid draining or line breaks, the Simplex CCAV acts quickly . . . breaks the vacuum for maximum safety.

WRITE FOR FREE BROCHURE

SIMPLEX VALVE & METER COMPANY
6789 UPLAND STREET, PHILADELPHIA 42, PA.

SIMPLEX®

VALVE AND METER COMPANY



Taller & Cooper's Self-Contained Booths—at New York's Zoological Park.

Here, as at parks, parking lots, and toll facilities through-out the nation, Taller & Cooper Self-Contained Booths and collection equipment is first choice for swift, dependable processing of traffic and revenues.

Functionally designed and pre-fabricated, Taller & Cooper Self-Contained Booths eliminate long weeks of costly on-the-site construction. Weather-proof, accident-proof, all steel, they are installed in matter of hours, ready for years of safe, comfortable, maintenance-free operation.

If you are planning to build or modernize your parking or toll facility, let Taller & Cooper's 20 years of experience and know-how help you achieve the finest.

WRITE TODAY for unique design and construction details.

TALLER & COOPER, INC.

ENGINEERS • MANUFACTURERS

72 WASHINGTON ST. BROOKLYN 1, N. Y.

TOLL COLLECTION SYSTEMS
●
TOLL BOOTHS

TALLER & COOPER TOLL EQUIPMENT IS USED ON EVERY MAJOR TOLL FACILITY IN THE U. S.

Purchasing

Payroll Checks Can Be Shorter in 1954

A new accounting machine uses a narrow check stub and reduces the overall size of pay statements by at least 8 inches. The simplified Underwood Sundstrand payroll accounting machine does away with horizontal "spread" statements of the folding variety and lists as many as 16 earnings and deductions vertically on a 3½-in. stub.

Adoption of a compact column form with room for 20 totals or control balances enables preparation of an employe's pay statement, tax records and

New Sundstrand payroll accounting machine is simple to operate.

a complete pay journal in a single operation.

After the check is written, it is automatically ejected and stacked numerically in a check bin. Form handling is reduced to a minimum. Other automatic features include voiding of pay checks when deductions exceed earnings, consecutive numbering of checks, printing of dates, form alignment, opening and closing of front-feed carriage, check protection, full visibility of all entries and automatic printing of all balances, stored column totals or sub totals. These features, coupled with the 10-key keyboard, make for ease of operation.

For all the facts about this simplified payroll machine, write Underwood Corp., One Park Ave., New York 16, N. Y., or you may use the Post Card on the colored page in this section. Circle No. 753.

Cities Can Unload and Store Salt for Less

The highway superintendent of a large municipality who uses salt for winter ice control, is offered an easier way to unload this salt from freight cars and store it in lixators. The method involves the use of a pneumatic handling system that not only speeds unloading operations, but eliminates waste

and reduces handling costs as well.

The Beaumont Birch system requires an airtight bin that will withstand pressure. A partial vacuum is created within this bin, and a hose with a gulping tool connects it with the freight car at the siding. When the steam or mechanically operated exhauster is started, the salt is drawn out of the car directly into the lixator. As the velocity pressure delivering the salt is released from the confining area of the hose to the expanse of the bin, the salt drops from the conveying air. This air is then discharged directly to atmosphere or through the air washer.

With this low-cost installation, a freight car can be unloaded in four hours. The vacuum pick-up assures the complete removal of salt.

For a full description of the Beaumont Birch system and how it operates, write the Beaumont Birch Co. Inc., 1501 Race St., Philadelphia 2, Pa., or use the Post Card on the colored page in this section. Circle No. 757.

New Heavy-Duty Gun Facilitates Police Work

City police officials training for target accuracy are asked to inspect the Colt Trooper, a new heavy-duty service gun designed by Colt's Mfg. Co., Hartford 15, Conn. The Trooper combines an adjustable Accro rear target sight with a quick-draw ramp-type

New Colt Trooper.

front sight, assuring target accuracy in a holster sidearm.

Specifications for the new Colt revolver are: calibers, .38- and .38 Special (mid-range, regular and highspeed loads) and .22- and .22 Long Rifle (regular or high-speed loads); length over all of .38 Special, 9¼ inches; length of .22 Long Rifle barrel, 4 inches. Both models are said to have non-slip, close grained walnut stocks, as well as hammer safety and double cylinder-lock features.

Get full information by writing the company direct, or you may use the Post Card on the colored page in this section. Circle No. 766.

THE FACTS OF
LIGHT
...AND THOMPSON
Servisafe
METAL POLE UNITS
FACT NO. 1: Modern parkway and street lighting should be designed for appearance as well as efficiency. In keeping with this trend, THOMPSON now offers an exclusive new Metal Pole Unit that features streamlined beauty and assures peak lighting efficiency at all times.
FACT NO. 2: Only THOMPSON "Servisafe" Units incorporate a patented disconnecting and lowering mechanism that permits rapid . . . safe . . . efficient ground-level luminaire servicing by one man.
FACT NO. 3: THOMPSON "Servisafe" Units eliminate all maintenance hazards. No ladders, scaffolding or lifts are needed for luminaire servicing . . . luminaires can be quickly lowered, relamped and cleaned, and then repositioned from the ground. Electrical dangers are eliminated because lowered fixtures are 'dead'.
FACT NO. 4: THOMPSON "Servisafe" Units facilitate low-cost maintenance by saving man hours . . . reducing accidents. Pole-mounted luminaires now can be serviced at a fraction of normal time and cost.
Write for catalog PB-53 for complete details
1756-TE
1. DISCONNECT
2. LOWER
3. SERVICE
4. REPOSITION
5. REPEAT
THE THOMPSON ELECTRIC CO.
1120 POWER AVENUE • CLEVELAND 14, OHIO

Navy saves $35,000

by taking ships' inventory with Recordak Microfilm

The way the U. S. Navy used Recordak Microfilming to collect and analyze the stock records carried aboard 100 ships suggests important savings—and tighter control—for all agencies with regional or branch offices.

This was the problem: Each ship had thousands of record cards. The data on these cards had to be copied accurately and promptly while the ship was in port . . . and forwarded to the Central Supply Office. Furthermore, it was imperative that interruptions in the normal work of the ship's crew be kept at a minimum.

How could the job be done? Manual copying and the mark-sensing of punched cards were considered . . . discarded as too impractical, too expensive.

Recordak Microfilming was the answer. A portable Recordak Micro-File machine could be set up right where the ship's records were kept . . . and operated by anyone. 1,000 photographically accurate and complete copies could be made in an hour compared to 20 per hour with manual copying. Total microfilming cost was only one cent per exposure, which resulted in an average saving of $350 per ship . . . $35,000 all told—plus savings in shipping costs and filing space in the Central Supply Office.

Recordak Triplex Microfilmer—one of the six models designed for copying office-size records. Available on low-cost purchase or rental basis.

65 different types of business—
thousands of concerns . . . now eliminating
costly manual transcription with Recordak Microfilming.

If you have thought of Recordak microfilming as a process which only saves space and increases protection, you should talk to a Recordak Systems Man *soon!* For the chances are good that he can point to agencies of the same type and size as yours which are simplifying their daily-record-keeping routines with this truly amazing process.

You'll be under no obligation whatsoever—just write to Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

"Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—
and its application to government routines

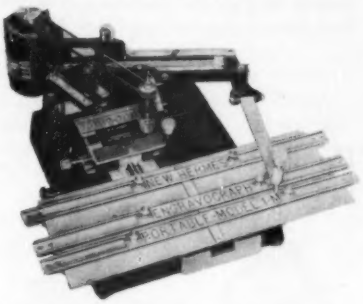
Purchasing

Ryerson Distributes Carlon Plastic Pipe

Joseph T. Ryerson & Son, Inc., P. O. Box 8000-A, Chicago 80, Ill., is now distributing plastic pipe and fittings produced by the Carlon Products Corp. of Cleveland, Ohio, according to J. L. McDermott, manager of the industrial plastics division of the Ryerson Co. Service on these products is available through the 16 Ryerson steel service plants located in major industrial areas across the country.

Ryerson's industrial plastics division will sell both flexible and rigid Carlon plastic pipe in a number of compositions, for use in all types of low pressure lines handling liquids, highly corrosive fluids, gases, vapors and wastes. Service is also available on custom produced plastic pipe for special applications. The pipe, reports Mr. McDermott, weighs about ⅛ as much as steel pipe and is comparable in price to galvanized pipe.

Street-Name Signs



New unit provides clean-cut lettering.

One way to stretch your city's budget, explains this manufacturer, is to make, not buy, the signs and name plates used on streets, in parks and in public buildings. This is quickly done with a new portable engraving machine, no larger than a typewriter and far easier to operate.

The new unit turns out a permanent, clean-cut, attractive sign with little effort. Working on the pantographic principle, it engraves letters on a variety of materials, including plastics, wood and metals, insuring faithful reproductions.

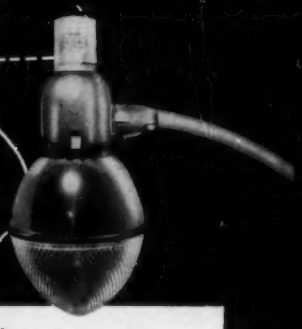
Literature on the cost-saving engraving machine will be sent on request by the New Hermes Engraving Machine Corp., 13-19 University Pl., New York 3, N. Y. Write directly, or use the Post Card on the colored page in this section. Circle No. 740.

When you think:

Fully Automatic Light Control

You should say:

LUMATROL®
PHOTOELECTRIC
LIGHT SWITCH



NEW! OMNI-DIRECTIONAL SENSITIVITY—INTEGRATES LIGHT FROM ALL DIRECTIONS!

Here's Why:

In simplicity, efficiency, and continuing low cost, the LUMATROL Photoelectric Light Switch is unmatched by any other light control device!

A Few Facts:

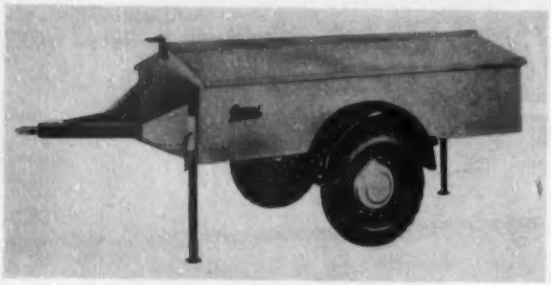
The LUMATROL Photoelectric Light Switch rates first on all twelve specifications normally applied to this type control. These include size, weight, volume, sensitivity, time delay, power consumption, safety, number and type of parts, and method of installation.

Most Important:

LUMATROL is sensitive to the average of existing light, integrating it from all directions. This exclusive feature greatly increases both efficiency and economy of the lighting system. Installation is quick and simple . . . just plug it in . . . and there are no relays, no mercury switches or troublesome condensers to maintain.

WRITE FOR TECHNICAL BULLETIN

micro balancing
INCORPORATED
GARDEN CITY PARK, L. I., NEW YORK
® Trade Mark Reg. U.S. Pat. Off.



Tool Box on Wheels

Municipalities are offered a pneumatic-tired trailer-type steel tool box, easy to transport from job to job. It features rigid telescoping legs at each end, and one padlock that protects the entire box.

Designed by Aeroil Products Co., Inc., 69 Wesley St., South Hackensack, N. J., the 6-foot box has an over-all length of 114½ inches including tow frame, an over-all height of 49 inches and a loading height of 41 inches. Load capacity is some 2,000 pounds, and the tow eye can be placed at any height from 24 to 38 inches.

One man can open or close both lids from a single position. In locking, the handles pull the covers tightly closed. They lock under the box rim. To open either cover, the locking handles must be released.

Get full information by writing the company direct, or use the Post Card located for your convenience on the colored page in this section. Circle No. 770.

How Bennett Bilt WASTE RECEPTACLES reduce Fire Hazards!

Fire hazards are reduced by conveniently placing Bennett Bilt, self-closing, Waste Receptacles to receive waste paper and other trash. These enclosed Bennett Receptacles snuff out fires. Matches, cigarettes and other inflammable material thrown into open containers can start serious fires. That's why so many plants standardize on Bennett Receptacles... make cleanliness automatic, too.

Only BENNETT WASTE RECEPTACLES HAVE ALL THESE FEATURES

- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy corrosion resistant steel
- All welded construction... reinforced corners
- Smooth exterior surface... nothing to catch and tear clothes
- Self-closing mechanism assures closed doors when not in use
- Round corners for structural strength and pleasing appearance
- Baked enamel finish... green, gray or white

These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy". Quality and every consideration for hard usage are self-evident both inside and outside of these receptacles.

Fill in and Mail Coupon Today

THE BENNETT MANUFACTURING CO., ALDEN, N. Y., AC-3-54

Kindly send to my personal attention a FREE copy of the fully illustrated Bennett Bilt Waste Receptacle Catalog.

Name _____

Organization _____

Street _____

City _____ State _____

Hand Lamp Features Flashing Red Beacon

Lamp and beacon may be operated either independently or together.

Use the new Beacon Lamp as a signal light, a hand lamp, or both. In time of emergency, such as a traffic accident, the lamp's powerful headlight provides enough light in which to work, while a flashing red beacon serves as ample warning to other motorists.

This combination electric hand lamp and flashing red beacon is available in two models, the sealed beam (No. 164), and the standard bulb type (No. 104). It features a Big Beam 2-po-

sition flashing beacon which serves as a taillight or tower beacon, offering unobstructed visibility.

According to the manufacturer, the lamp and beacon may be operated independently or together. They are powered by one standard 6-volt lantern battery, housed in a steel case. With no wires to connect, battery replacement is made in seconds.

Get full information on the new Beacon Lamp by writing U-C Lite Mfg. Co., 1050 W. Hubbard St., Chicago 22, Ill., or you may use the Post Card on the colored page in this section. Circle No. 756.

Chain Saw Cuts in Any Position

A gravity feed carburetor is featured in this new portable chain saw, offering the operator a variety of cutting positions—up, down or sideways. The saw is driven by a 1-cylinder, 2-cycle, air-cooled engine, and includes a waterproof ignition system and surefire starter.

Operating speed of the Luther chain saw is 4,500 rpm, with a fuel tank capacity of one quart. A 20-in. cutter bar is standard, but 14-, 16-, 26- and 30-in. bars are also available.

For additional data, address the Luther Corp., P. O. Box 513, Williams Bay, Wis., or take advantage of the Post Card on the colored page in this section. Circle No. 749.

500,000 Water Meters Service Los Angeles

Los Angeles, Calif., installed its 500,000th water meter recently, making it the first city in the nation with a half million water meters in service. The unit, a standard Split-Case ¾- x 1-in. Trident, also boasted the distinction of being the 11,500,000th meter made by the Neptune Meter Co., 50 W. 50th St., New York 20, N. Y.

According to the Los Angeles Dept. of Water and Power, the city's increasing population has necessitated the installation of more than 25,000 meters per year since 1950. Los Angeles has a three-way supply of water—from the Los Angeles River and local sources; the Los Angeles Owens-Mono Aqueduct System, extending 338 miles from the city; and the 340-mile Colorado River Aqueduct.

This latest meter was installed at the home being built for Mr. and Mrs. Harry B. Ross at 4435 Caledonia St. Officials attending the ceremony included Samuel B. Morris, general manager and chief engineer of the Dept. of Water and Power; Burton S. Grant, chief engineer of water works; Ben P. Griffith, president, and William B. Himrod, vice-president of the Board; Robert A. Heffner, W. Ballentine Henley and J. C. Moller, Jr., of the Board of Water and Power Commissioners; Assistant General Manager William S. Peterson; George C. Sopp, joint system head and assistant general manager; and Henry Horandt, Pacific Coast manager of the Neptune Meter Co.

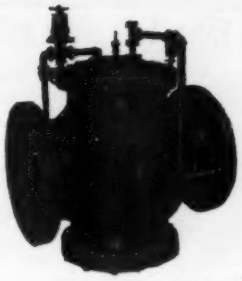
IF YOU HAVE EXPERIENCED

Water Shortage—Surge—Unnecessary Waste

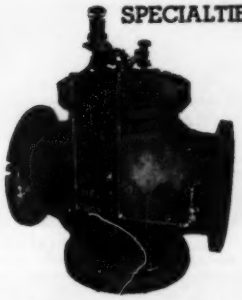
INSTALL ROSS VALVES FOR CONTROL OF WATER STORAGE, SUPPLY CONDUIT AND DISTRIBUTION PRESSURES

ROSS SINCE 1879

MANUFACTURERS OF AUTOMATIC HYDRAULIC CONTROL VALVES AND SPECIALTIES



PRESSURE REDUCING VALVE



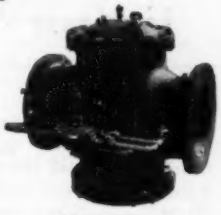
SURGE RELIEF OR BACK PRESSURE VALVE

OTHER ROSS PRODUCTS:

FLOAT VALVES
STRAINERS

HYDRAULIC BOOSTER PUMPS FOR CHLORINE FEED

HYDRAULIC AND ELECTRIC CONTROLLED VALVES



ALTITUDE VALVE

ROSS VALVE MFG. CO. INC.

8 Oakwood Ave. Troy, N. Y.

GOLDAK makes the world's finest LOCATORS

THE *Dualtronic* COMBINATION PIPE & LEAK DETECTOR

The "Dualtronic" is acclaimed by Municipalities and Utilities throughout the world, because of the time and labor savings effected by one instrument doing the work of two so efficiently and effectively. Ruggedly built! Lightweight! One man operation! The "Dualtronic" is the answer how to cut costs 50%!

Lightweight! Rugged!

GOLDAK

FEATHERWEIGHT MODEL 87

PIPE LOCATOR

Guesswork eliminated. Pinpoint location of pipes, mains, gates, tees, etc. One man operation, total weight 11 lbs.! Strong, positive location signal guaranteed by Licensed circuits and Microtuning, exclusive with Goldak. Lasts a lifetime, guaranteed performance.

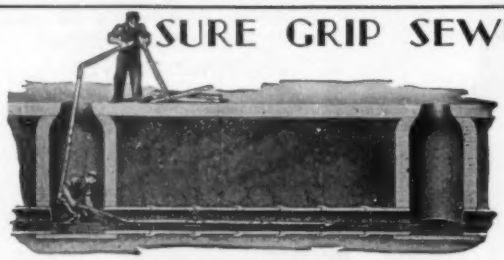
Write for FREE literature!

The GOLDAK Company

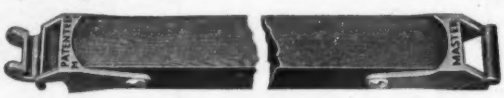
Leading Makers of PIPE LOCATORS Since 1933

1544 W. GLENOAKS BLVD.
GLENDALE 1, CALIFORNIA

SURE GRIP SEWER RODS and ACCESSORIES



are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.



The MASTER, a heavy duty rod,
Fir stock 1½ x 1½ inch square.

The REGULAR, a light rod,
Fir stock 1¼ x 1¼ inch square.

Write for catalog on complete line of sewer cleaning equipment.

EXPANDING SEWER MACHINE CO.

NAPPANEE, IND.

Is Your City Up-to-Date in Its Operation Methods?

THE AMERICAN CITY
470 Fourth Ave., New York 16, N. Y.

Please send me ..... copy (copies) of your Municipal Official's Handbook (Price per copy is $3.00)

A check covering this order is enclosed ..... Please bill me ..... (Check one)

Name .....

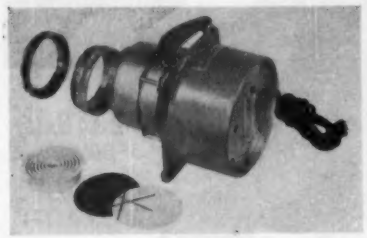
City or Company .....

Address .....

City..... Zone..... State.....

A good way to find out is to read about the practical experience of other city officials who have problems like yours. This experience is described in the "Municipal Official's Handbook" by William S. Foster, Engineering Editor of *The American City*. The latest methods on street construction and maintenance, snow removal, street cleaning, and refuse collection and disposal are explained in detail. Write us today for your copy.

High Volume Sampler Aids Air Pollution Control



Developed by the United States Atomic Energy Commission, this High-Volume Air Sampler has been made available for general use by The Staplex Co.

Air pollution, long a problem to municipal governments interested in maintaining high health standards, is easier to control with this High Volume Air Sampler. Available from The Staplex Co., through permission from the United States Atomic Energy Commission, these units are used to sample large volumes of air for particulate matter by means of a filter paper. They have, in fact, sampled air containing particles as small as 1/100 of a micron in diameter.

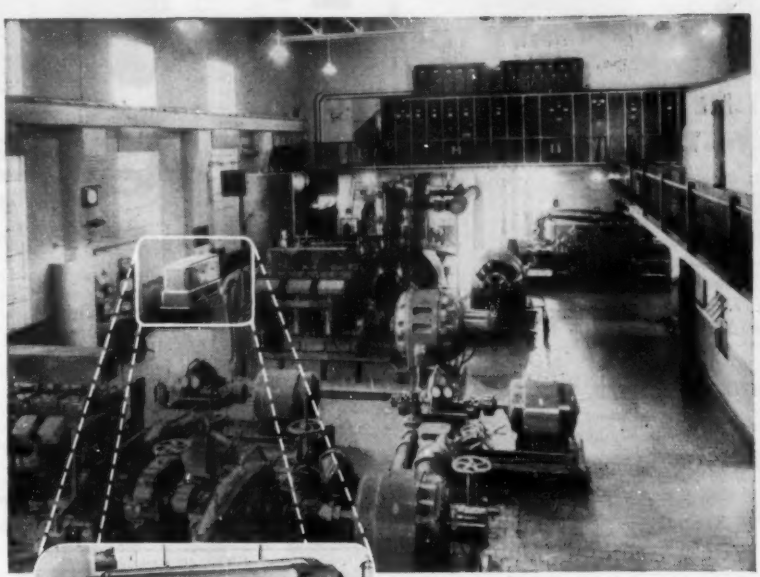
Developed in the New York laboratories of AEC, and designed for 24-hour sampling, the High Volume Air Sampler employs a turbine-type blower and is housed in lightweight, heavy-duty cast aluminum.

For additional data, write The Staplex Co., Air Sampler Div., 777 Fifth Ave., Brooklyn 32, N. Y., or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 769.

Good Way to Mix Cold Asphalt

Designed by the K. E. McConnaughay Co., 217 N. 6th St., Lafayette, Ind., the new Model JR-54 Multi-Pug Portable Asphalt Mixer is equipped to handle up to two tons of cold mix per minute. It provides volumetric proportioning of asphalt and aggregate.

How Dubuque insures uninterrupted operation of its pumping station



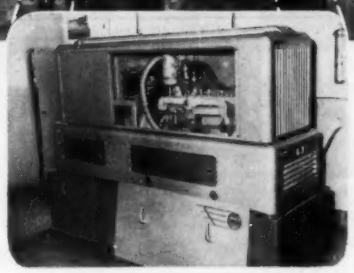
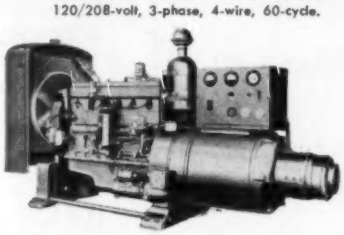


Photo of Dubuque (Iowa) installation shows Onan Model 25HN, 25KW, 120/208-volt, 3-phase, 4-wire, 60-cycle.



New Onan 50KW Standby Plant

The Onan Model 50KA is designed for emergency use in pumping stations, sewage lift stations, civil defense or any installation with heavy load requirements. Write for specifications.

Continuous operation of Dubuque's Eagle Point water pumping station is assured during electric power interruptions by an Onan 25,000-watt, Model 25HN-4R Standby Plant. Five times since the Onan unit was installed in April, 1952, it has automatically cut in and furnished all the electric power for the following essential equipment: One ¼ h.p. electric motor for the station's oil burner, one ¼ h.p. electric motor for the condensate pump, four ⅝ h.p. and two ¼ h.p. motors for heating unit blowers, and thirty 200-watt lights for lighting the building.

The gasoline-driven standby plant also powers this additional equipment during extreme emergencies such as floods: Two 5 h.p., three 1 h.p. and six ½ h.p. electric motors for sump pumps and one 5 h.p. motor for priming the main pumping units.

Dubuque is one of the many communities and municipalities throughout the United States that is protected against power outages by Onan Standby Electric Power.

Write for Standby Folder and Engineering Assistance

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

8362 University Avenue S. E. • Minneapolis 14, Minnesota

SAVES $ LOTS OF $

. . . on pipe runs under streets, highways, pavement, gardens, etc.

REG. U. S. PAT. OFF.

HYDRAUGER*

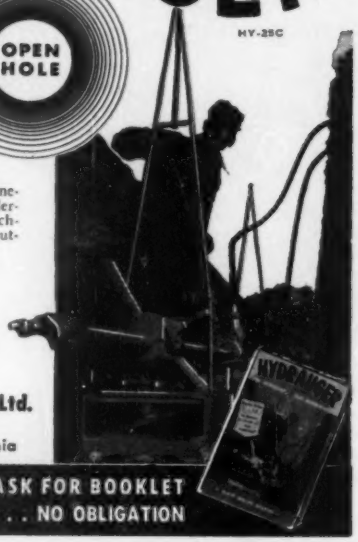
HY-25C

OPEN HOLE

AVOID TIME WASTE

Hydrauger is a modern, time-saving way to install underground pipe . . . avoids trenching, backfilling, pavement cutting, etc.

2" to 24" BITS and REAMERS



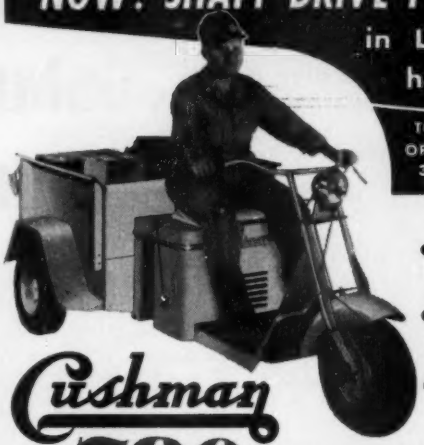
HYDRAUGER CORP. Ltd.
681 Market Street
San Francisco, California

*Earth Boring Tool

ASK FOR BOOKLET . . . NO OBLIGATION

NOW! SHAFT DRIVE POWER in LIGHT hauling!

TOTAL OPERATING COST 3/4¢ PER MILE



- EXTRA POWER
- EXTRA CAPACITY
- EXTRA ECONOMY

Cushman SHAFT DRIVE 780 TRUCKSTER

Slash inner plant handling and delivery costs as have hundreds of other plants. Put Cushman 780 TRUCKSTERS on your jobs—NEW this year with SHAFT DRIVE. Complete with 3 speeds forward, one reverse. Get the EXTRA power advantages of big vehicle shaft drive—plus quick, easy handling AND low operating cost—less than a penny a mile. With capacity up to 500 pounds, TRUCKSTER can speed up hundreds of jobs for you!

- Write for FREE illustrated booklet
- See Your Nearest Cushman Dealer for FREE demonstration
- SOLD and SERVICED NATIONALLY

CUSHMAN MOTOR WORKS, INC.
960 No. 21st St.
Lincoln, Nebraska

ONLY Geerpres WRINGERS

(1) Have exclusive Interlock Gearing
(2) which multiplies wringer pressure
(3) to squeeze mops drier
(4) and eliminate all splash

Fully guaranteed. Available in two styles and three size ranges to meet all mop wringing requirements. For further information write to:

GEERPRES WRINGER, INC.
Manufacturers of High Grade Mopping Equipment
P.O. BOX 658 • MUSKEGON, MICHIGAN

Nite-Bright HIGHWAY SIGNS
"BRIGHT BY DAY — BRILLIANT BY NIGHT"

FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH SCOTCHLITE • EMBOSSED STEEL BAKED ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

See Our Listing in the 1953 Edition of The Municipal Index

Write Us for Complete Information

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

Purchasing

Blaw-Knox Acquires APSCO Line

Acquisition of the All Purpose Spreader Co. of Elyria, Ohio, by the Blaw-Knox Co., Koppers Bldg., Pittsburgh 19, Pa., is announced by Blaw-Knox President W. Cordes Snyder, Jr. The recently completed negotiations give the company complete control of the APSCO line of highway construction equipment.

According to Mr. Snyder, Blaw-Knox can now furnish equipment for paving state highways and turnpikes with asphalt or concrete, and for all types of highway construction and improvement, including road widening and the placing of stone base. The company's aim, he continues, is to "enable highway contractors to make a 'one call' contact" in obtaining Blaw-Knox equipment for any paving job.

The APSCO road widener and base paver will be added to the Blaw-Knox line immediately, reports Mr. Snyder; the former under the trade name Blaw-Knox APSCO Widener, and the latter as Blaw-Knox Base Paver. Other products acquired in the transaction will be made available at a later date.

Parking Meters Get Year-Round Protection

A solution to many of the parking meter problems that annoy motorists, delay collections and ultimately result in a loss of revenue is offered by the American Grease Stick Co., Muskegon, Mich. This firm has introduced Lock-Ease, a graphited lock fluid that helps eliminate coin mechanism and lock failures due to freezing.

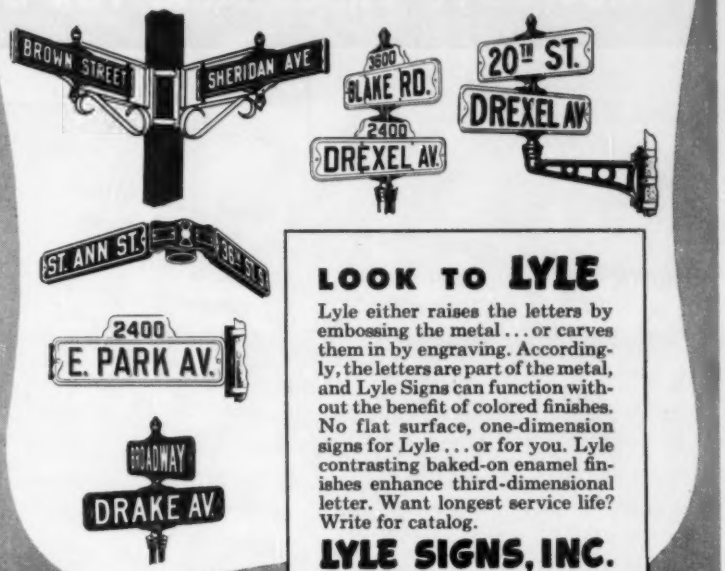
Applied through lube holes or keyways, Lock-Ease helps to seal out moisture and dust. It contains colloidal graphite in a fluid carrier which penetrates quickly. The carrier then evaporates, leaving a graphite film on working parts. The fluid also contains a rust inhibitor.

According to the manufacturer, Lock-Ease is available in a 4-ounce controlled-flow container which delivers a drop at a time or squirts a pressure stream to flush out moisture and dirt. It is approved by auto and lock manufacturers and major oil companies and is distributed by hardware and automotive jobbers.

Full details on Lock-Ease are available directly from the company, or you may use the Post Card on the colored page in this section. Circle No. 762.

Your choice of street name signs

EMBOSSED OR CARVED-IN METAL



LOOK TO LYLE

Lyle either raises the letters by embossing the metal . . . or carves them in by engraving. Accordingly, the letters are part of the metal, and Lyle Signs can function without the benefit of colored finishes. No flat surface, one-dimension signs for Lyle . . . or for you. Lyle contrasting baked-on enamel finishes enhance third-dimensional letter. Want longest service life? Write for catalog.

LYLE SIGNS, INC.

2722 UNIVERSITY AVENUE, S. E.
MINNEAPOLIS 14, MINNESOTA

Booklet Reveals { HOW TO CLEAR BRUSH AT SIX-TO-ONE SAVINGS

BRUSHMASTER

ONE-MAN-OPERATED, MOBILE POWER-DRIVEN BRUSHCUTTER IS FASTER, SAFER, MORE EFFICIENT

ONE MAN ACCOMPLISHES WORK OF SIX!

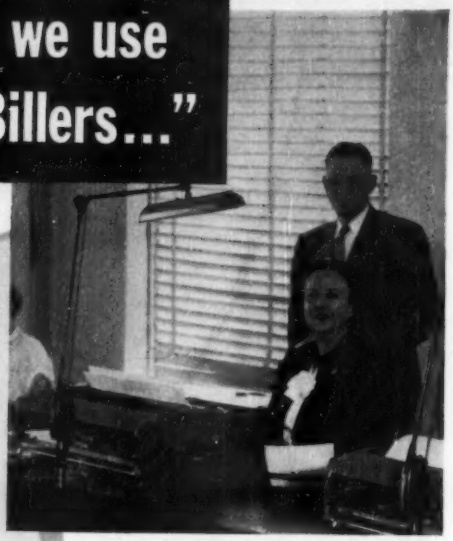
Your company should join the ranks of those saving up to 83% on right-of-way maintenance! Brushmaster cuts all brush . . . from matted grass to saplings up to 4" in diameter . . . cuts vines, briars, honeysuckle, thorns, etc. Operates freely from right to left . . . close to ground . . . or overhead. Vibration-free, clutch controlled, positive drive.

Free Fully illustrated, colorful booklet shows secret of six-to-one savings!

BRUSHMASTER SAW, INC. Subsidiary of Harrington & Richardson, Inc., established 1871.

684 EMERALD ST., KEENE, N. H.

"In Jackson County, Missouri, we use Underwood Sundstrand Tax Billers..."



County Clerk Ben Nordberg and one of his 12 Underwood Sundstrand "tax billers".

The operation of Underwood Sundstrand Tax Billers is so simple we do not require especially trained personnel; anyone can operate this equipment with only a few minutes' instruction. All the operator does is insert and remove the forms and write the assessed valuation on the keyboard — nothing more — all of the computations are made and printed in the proper columns automatically, even to the correction of each tax amount, to the nearest penny. Totals for each page are accumulated automatically, and proof of accuracy of each page is established by computing the total valuation shown for each page and comparing this computation with the stored totals. The recap of each tax book is also handled automatically through use of this equipment.

From an article by Ben Nordberg, Clerk of Jackson County Court, Kansas City, Missouri, in THE AMERICAN CITY for March 1954.

Let us send you a complimentary copy telling how Jackson County saved $25,000 a year with these "Tax Billers".

Underwood Sundstrand Accounting Machine

UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and other Supplies

One Park Avenue UNDERWOOD **New York 16, N. Y.**

Sales and Service Everywhere

Get Full Bucket Load In Seconds

Standard equipment on these new front-end loaders are a torque converter, power steering and a reversing planetary transmission. The unit features a patented bucket rocking action, which together with the scooping motion of the lift arms, provides a full bucket load in seconds.

Available this spring, the new Transo loaders are made in sizes ranging from ½- to 1½-yd. capacity. They can move to discharge points at speeds up to 18 mph, and can travel through sand, mud, snow and rocky terrain. The 4-wheel drive and low center of gravity provide powerful traction on all four wheels, eliminating tire slippage.

Each Transo loader boasts the quick transmission of power at very low torque, a spring loaded clutch on the outside of the transmission that cushions shock loading, and heavy cast-iron grills that act as counterweights. Operator vision is improved by the low 36 to 48-in. normal carrying position.

Full details on the Le Roi Transo TLF-150 front-end loaders are available from the Transo Div., Le Roi Co., 1706 S. 68th St., Milwaukee 14, Wis. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 764.

New Le Roi Transo TLF-150 front-end loader.

California Family Gets Gold Garbage Disposer

Gold rings, gold watches, gold cuff links and gold cigarette lighters; all of these are familiar gifts around Christmas time. But how many of you received a gold garbage disposer?

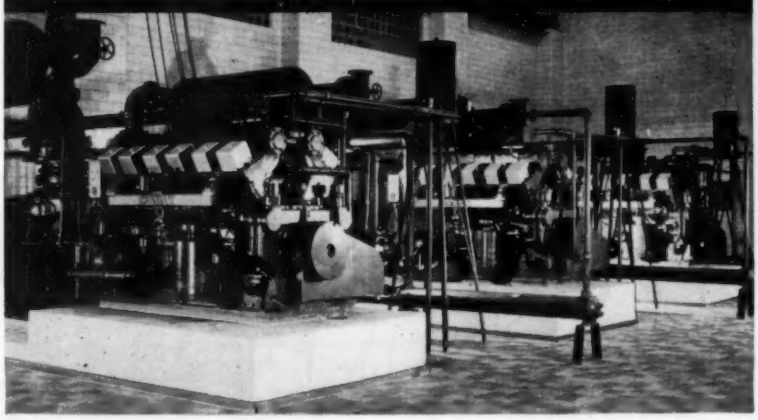
Leo Ferguson of Lakewood, Calif., got one last Christmas; a 14-karat gold plated Waste King Pulverator. Mr. Ferguson, his wife and three children, were originally offered the disposer some months ago, when they became the 10,000th family to buy a home in Lakewood, the world's largest 100% Pulverator community.

In December, after they were established in their new home, George Kelley, sales coordinator for the Given Mfg. Co., 3450 Wilshire Blvd., Los Angeles 5, Calif., delivered the gold Waste King, which was placed under the family tree and then installed. Its estimated cost is $500.

climax BLUE STREAK ENGINES

Provide Power In

VIRGINIA'S LARGEST SEWAGE TREATMENT PLANT



Three of the five Climax Sewage Gas Engines used at Roanoke, Virginia.

In the new Four Million Dollar Sewage Treatment Plant designed to treat wastes from a population of 140,000, five Climax Engines provide the dependable power.

Three Climax Model V-125, 12 cylinder sewage gas engines each rated 220 H.P. at 670 r.p.m. drive Roots-Connersville Blower equipment with a total capacity of 15,000 c.f.m. Two Worthington 12 MGD raw sewage pumps are driven by Climax V-80, 8 cylinder sewage gas engines rated 134 H.P. at 700 r.p.m.

Heat of the jacket water and exhaust gas is recovered and utilized for the digesters and building.

This plant was designed by Alvord, Burdick & Howson of Chicago, and construction was supervised by Mattern & Mattern of Roanoke.

climax

FOR COMPLETE INFORMATION, WRITE TO . . .

ENGINE AND PUMP MFG. CO.

208 So. La Salle St.

CHICAGO 4, ILLINOIS

Factory–Clinton, Ia. *District Office*–Dallas, Tex.

PROTECT YOUR TREES

from pests and pestilence with

John BEAN *ROTOMIST*

Fast, thorough, and dependable protection for shade trees, parks and recreational areas is a simple matter with the new John Bean Rotomist. Completely re-designed, this new unit offers more performance-per-horsepower than has ever before been possible because of the new "straight-through" method of air handling. Powered by a famous Willys "Jeep" engine, the air delivery unit has a 29-inch axial flow fan which delivers 28,000 cubic feet a minute at 100 miles velocity.

Accurate "on-target" delivery is easy with the airplane-type hydraulic controls that rotate the turntable 360° right or left and aims the counter-balanced discharge outlet through a 110° arc.

The spray system includes the new John Bean Royalette enclosed oil-bath, plunger-type pump that delivers 7 gallons per minute at 400 pounds pressure; cone type nozzles that are easily detached to allow adjustment to the desired flow; a 100-gallon tank made of heavy gauge steel, and triple-jet agitation in the tank.

The unit is available for either truck or trailer mounting, or can be purchased in a factory mounted trailer model.

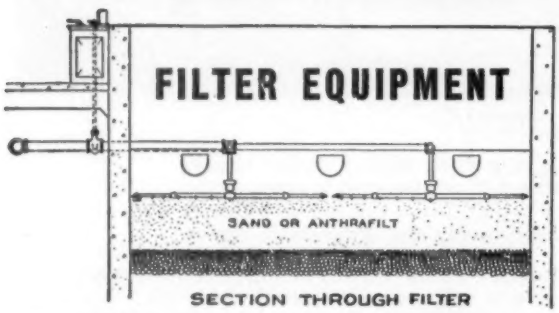
Write for the new Rotomist catalog for more complete information.

fmc John BEAN DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

LANSING 4, MICH. • SAN JOSE, CALIF.

PALMER

FILTER EQUIPMENT



SECTION THROUGH FILTER

Filter Bed Agitator Advantages

Requires an average of 40% less wash water

Eliminates mud balls

Prevents cracking and shrinking of the beds

Produces "new" sand after short period of normal operation

Enables you to increase filter runs up to 50%

Anthrafilt Advantages

Doubles the length of filter runs attainable with sand and quartz media

Requires one-half as much wash water

Filters are out of service less because of the shorter wash cycle

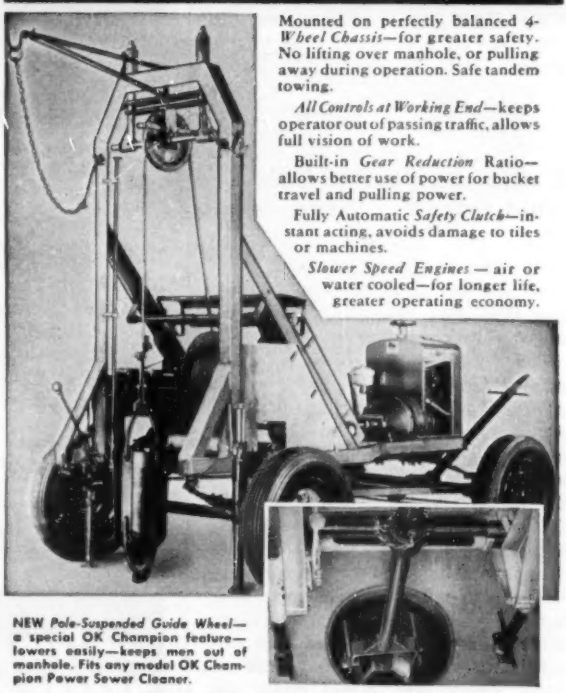
Coating, caking or balling with mud, lime, iron or manganese reduced to the minimum

Write for Circular

PALMER FILTER EQUIPMENT CO.

P. O. BOX 1655, ERIE, PA.

OK CHAMPION POWER SEWER CLEANERS



Mounted on perfectly balanced 4-*Wheel Chassis*—for greater safety. No lifting over manhole, or pulling away during operation. Safe tandem towing.

All Controls at Working End—keeps operator out of passing traffic, allows full vision of work.

Built-in *Gear Reduction* Ratio—allows better use of power for bucket travel and pulling power.

Fully Automatic *Safety Clutch*—instant acting, avoids damage to tiles or machines.

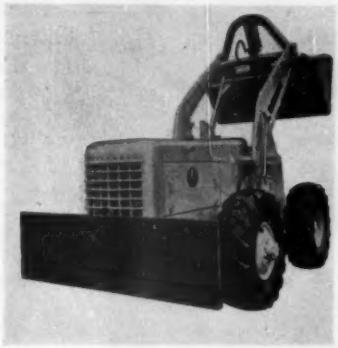
Slower Speed Engines — air or water cooled—for longer life, greater operating economy.

NEW *Pole-Suspended Guide Wheel*—a special OK Champion feature—lowers easily—keeps men out of manhole. Fits any model OK Champion Power Sewer Cleaner.

Write for latest OK Champion Circular

CHAMPION CORPORATION 4716 Sheffield Ave. Hammond, Ind.

Tractor-Shovel Improved By New Accessories



Accessory equipment designed to increase the usefulness of the Model HM 4-wheel-drive Payloader tractor-shovel in any size community consists, in part, of a wide pusher plate for rear mounting. This plate is made of heavy rolled steel, enabling the Payloader to push stalled trucks and other equipment and spot railroad cars. It includes a retractable towing link, so that the 1½ cu. yd. tractor-shovel can tow, haul or skid loads.

Where the Model HM is to be used as a prime mover, hauling hydraulically-controlled scrapers, wagons and rooters, a set of hydraulic connections and valves can be installed for control of the hauled equipment.

Full details on the Payloader and its many accessories, are obtainable from the Frank G. Hough Co., 710 Seventh St., Libertyville, Ill. Write directly, or use the Post Card on the colored page in this section. Circle No. 747.

Pneumatic Tool Accessories

As the municipal street departments have informed the *Municipal Index* that they own 3,500 portable air compressors and wish they had 1,500 more, they are large users of air tools, notably paving breakers. In addition to breaking pavement, this predominant street maintenance machine uses a score of accessory tools. A new folder displays these pictorially for instant identification and includes the specifications of each in convenient tabular form. They include moil points, asphalt cutters, clay spades, and rock-drill bits. An unusual, though always valuable, type of application information is given, such as the use of paving-brick and block-removing tools, as well as the use of bushing tools and tooth chisels.

This 12-page folder may be obtained from Brunner & Lay, Inc., 9300 King St., Franklin Park, Ill., or 150 Leslie St., Dallas, Tex., or 2425 E. 37th St., Los Angeles, Calif.; also from Brunner & Lay Rock Bit Corp., 2514 E. Cumberland St., Philadelphia, Pa., or 350 Depot St., Asheville, N. C. In addition, you may use the Post Card on the colored page in this section. Circle No. 763.

LET THE PUBLIC *keep your* **STREETS and PARKS CLEAN . .**

Use NORWICH Street and Park Baskets

83-C

CONSTRUCTION

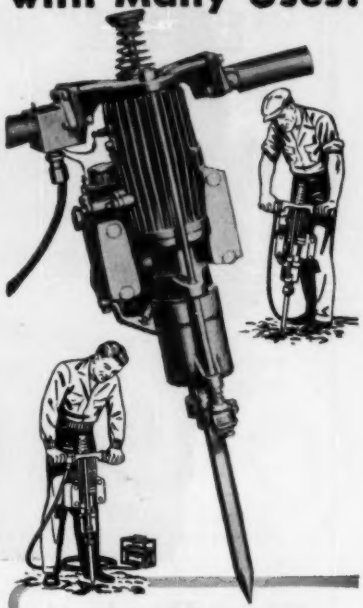
- 8 Ga. Wire Mesh.
- 8 Vertical Braces with Interlocking Ring.
- 3½" Deep Sheet Metal Pan.
- Angle Iron Ring.
- Reinforcing Bottom.
- Hot Dip Galvanized after Fabrication.

34" Deep.
22" Top.
18" Bottom.
Approx. wt. 43 lbs.
6" x 16" Blank Sign Plate

Write today for full details.

NORWICH WIRE WORKS, INC.
54 Broad Avenue
NORWICH, N. Y.

A Profitable Tool with Many Uses!



BARCO *Gasoline* **HAMMER**

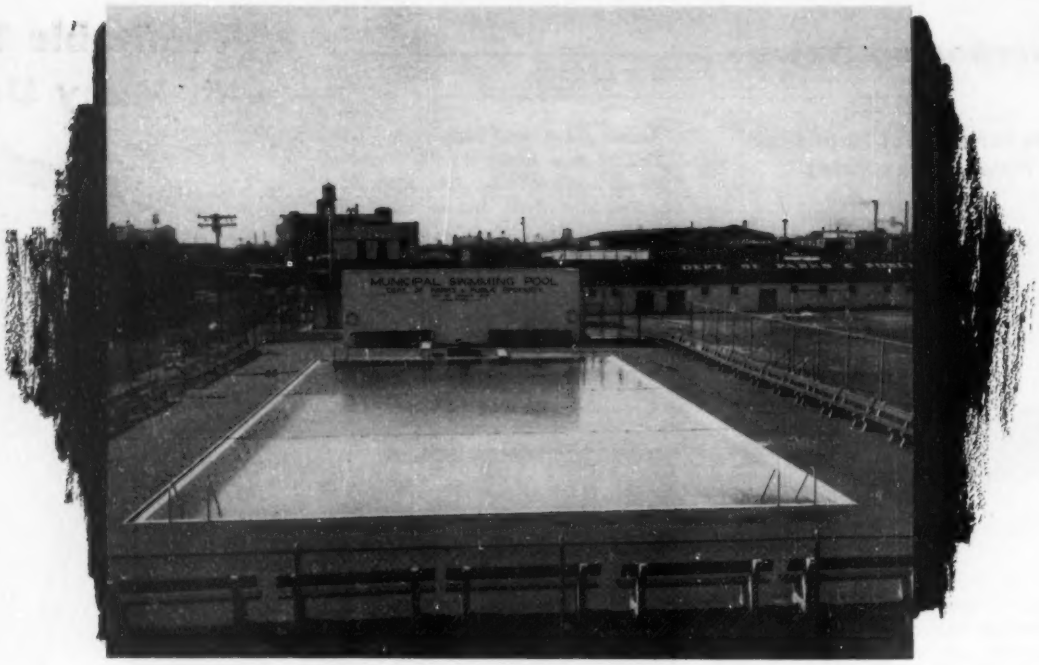
■ HERE'S why owners of the *improved* Barco Gasoline Hammer are enthusiastically acclaiming it as *"A Profitable Tool With Many Uses!"*

- Versatile! Use it for Pavement Breaking . . . Cutting . . . Digging . . . Rock Drilling . . . Frost Breaking . . . Rod Driving. Ideal for general utility, standby, and emergency service.
- One man operation. No compressor needed. Easy to take to any location.
- New ignition system—quick, easy starting.
- Quick disconnect at handle for battery cable. Thumb controlled switch.
- Powerful, rugged; up to 1550 strokes per minute.
- Economical! Low first cost, low operating expense, low maintenance expense. *Quickly pays for itself.*

ASK FOR A DEMONSTRATION—See for yourself—ask for our nearest distributor to give you a demonstration.

BARCO MFG. CO.
535-D Hough St.
Barrington, Illinois
A Chicago Suburb

Ask For This New **BULLETIN 613**



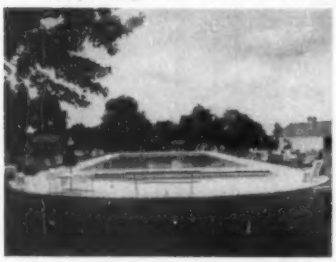
For better community living–
wiser community spending
a Koven all steel swimming pool

Communities across the country acclaim their KOVEN All Steel Swimming Pools for the satisfaction they assure in every respect – from health and happiness to economical top performance that lasts throughout the years. Beautiful, modern KOVEN Pools come in many sizes, styles and designs to conform with city planning and landscaping. Their welded steel construction frees them from weaknesses found in other kinds of pools. A KOVEN is the only leak-proof type of pool made. And because upkeep is merely an occasional coat of paint, it has the lowest maintenance cost of all!

KOVEN, with more than 70 years of steel fabricating experience, will take full responsibility for installation and construction. Call or write for a consultation—no obligation.

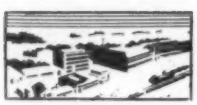
INDOOR AND OUTDOOR MODELS

Openings still available in some territories for Koven swimming pool representatives.



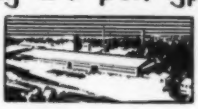
the pool with the lowest maintenance cost

the only leak-proof type built



Plants:

Jersey City, N. J.



Dover, N. J.

Trenton, N. J.

a leader in steel fabrication since 1881

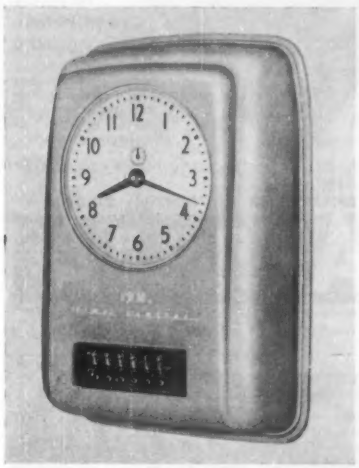
KOVEN STEEL SWIMMING POOLS, INC.

A DIVISION OF L. O. KOVEN & BRO., INC. 154 OGDEN AVE., JERSEY CITY 7, N. J.

Electronic Time System Corrects Clocks Automatically

Compensation for prolonged power interruptions due to electrical storms, shutdowns for maintenance and repairs, and other unavoidable occurrences is provided with IBM's new 12-hour Self-regulating Electronic Time System.

This new system corrects automatically clocks with time lags of as much as 11 hours. Time lags of 59 minutes or less, or fact errors of up to 55 seconds, are still supervised hourly and corrected in one minute as in either IBM times systems. According to the International Business Machines Corp., clocks showing the correct time, remain unaffected by hourly or 12-hourly supervisory signals.



IBM Type 91 Master Time Control is used to operate and regulate the new 12-hour Self-regulating Electronic Time System recently introduced by the International Business Machines Corp.

Because this system does not require any special clock and signal wiring, installation costs are nominal and it can be easily expanded and relocated. Existing installations of IBM Self-regulating Electronic or Synchronous-Wired Systems can be expanded to full 12-hour correction.

For detailed information describing the new Self-Regulating Electronic Time System, write directly to the International Business Machines Corp., 590 Madison Ave., New York 22, N. Y., or you may take advantage of the Post Card located for your convenience on the colored page in this section. Circle No. 767.

Have you investigated the **LOAD LUGGER*** for bulk collection and disposal of refuse?

COLLECTING

Patented containers are low, fill easily from three sides and the top, fill all the way, are water-tight halfway up, shut tight against flies and odors, can be locked against "free loaders."

PICKING UP

With safe load distribution, powerful hydraulic arms lift container to flat deck of LOAD LUGGER (easily mounted on any standard truck chassis and operated by the driver from his cab).

HAULING

With load well forward and no clumsy superstructure or excess weight, the cleanly designed LOAD LUGGER carries more pay load on a given truck chassis than any comparable equipment.

DISPOSING

Controlled vertical tilt and full discharge door, spring-loaded to open and close automatically, afford complete and safe dumping of all contents (no troublesome or leaky bottom opening).

Two LOAD LUGGER series are available for bulk collection and disposal of refuse: a 9000-pound pay load model with 6, 8 or 10 cubic-yard containers, and a 12000-pound pay load model with 8, 10 or 12 cubic-yard containers. Other LOAD LUGGER models carry maximum loads of 4500 to 26000 pounds.

The LOAD LUGGER SYSTEM lets one truck and driver do the work of many by continually picking up, hauling (then dumping, spreading, pouring or delivering the load) and returning a number of LOAD LUGGER containers or pallets to strategic locations for filling at operational convenience.

* registered trade mark of and manufactured by **BROOKS EQUIPMENT & MFG. CO.**, KNOXVILLE 21, TENNESSEE. Used all over the world. Write for catalog and price list.

HAVE AN ADEQUATE WATER SUPPLY ALL YEAR ROUND!

with the exclusive **RANNEY®**

WATER COLLECTOR FOR YOUR CITY

Now in use by the following volume water consumers: American Cyanamid Co., Wallingford, Conn.; Boise Water Corporation, Boise, Idaho; E. I. DuPont deNemours & Co., Inc.; Granite City Steel Co., Granite City, Ill. City of Manitowoc, Wis.

Millions of Gallons

The Ranney Collector is a unique kind of "well." It can produce more pure, cool water from one well, for less money, than ever possible before, with multiple wells. This greater yield adds millions of gallons to your present water supply, with fewer pumps and personnel. Installation and maintenance costs are held to a minimum.

Eliminates Filters

You can avoid the cost of maintaining an elaborate filter plant and water treatment station. The Ranney Method of water collection supplies a huge volume of naturally filtered water through exclusively engineered, screened horizontal well points that never clog. It pays to investigate the Ranney Method today!

I believe a Ranney Water Collector can save money for my community. Please send me further information.

Name.....

Company.....

Address.....

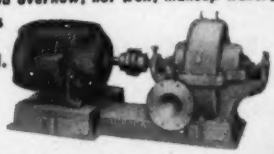
RANNEY METHOD WATER SUPPLIES, INC.
Water Supply Engineers and Contractors
841 Alton, Columbus 19, Ohio · Dept. AC-3

Faithful Performance on Important Jobs

— such as water supply, brine circulation, booster service, white water and overflow, hot well, makeup water, etc., etc.

Capacities to 1,200 G.P.M.

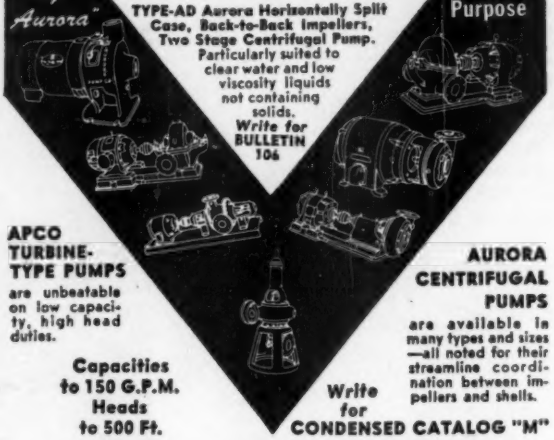
Heads to 460 Ft.



PUMPS "by Aurora"

For Every Purpose

TYPE-AD Aurora Horizontally Split Case, Back-to-Back Impellers, Two Stage Centrifugal Pump. Particularly suited to clear water and low viscosity liquids not containing solids. *Write for* BULLETIN 106



APCO TURBINE-TYPE PUMPS are unbeatable on low capacity, high head duties.

Capacities to 150 G.P.M. Heads to 500 Ft.

AURORA CENTRIFUGAL PUMPS are available in many types and sizes —all noted for their streamline coordination between impellers and shells.

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY

DIVISION OF THE NEW YORK AIR BRAKE COMPANY
66 Loucks St., AURORA, ILLINOIS

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

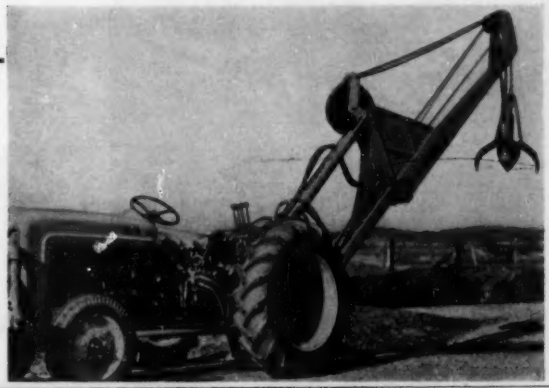
Many of the larger filter plants throughout the United States are equipped with our products.

PROMPT SHIPMENT

Inquiries and orders solicited.

NORTHERN GRAVEL COMPANY
Muscatine, Iowa
P. O. Box No. 307 Phone: 4261

Cleans Catch Basins Plus—

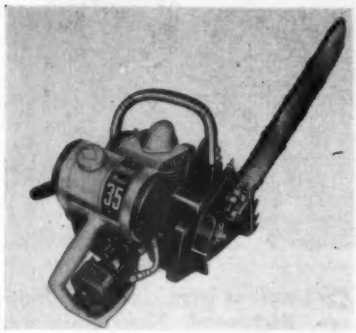


The catch-basin attachment for the Pippin Excavator provides a fast, inexpensive method of cleaning catch basins without tying up a large investment in single-purpose equipment.

With the excavator's dipper stick in position, its hydraulic cylinder operates the cable-and-sheave mechanism for lowering the orange-peel bucket to a maximum depth of 19½ feet. The bucket, opened and closed by a double-acting cylinder, is easily filled and raised to 9 feet above ground for loading directly into a truck.

For specifications and a list of 11 operations which the excavator performs besides cleaning catch basins, write Pippin Construction Equipment, Inc., White River Junction, Vt., or you nay use the Post Card on the colored page in this section. Circle No. 752.

Low-Cost Chain Saw Cuts Faster



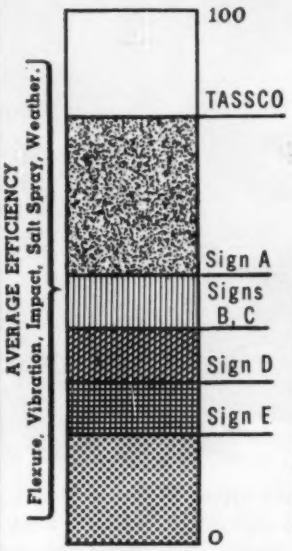
With a direct carburetor connection, Model 35 does away with tubes and pipes that dissipate energy.

An easy-to-handle chain saw that will cut timber, fence posts, beams and poles, and do a fast, effective job clearing hedgerows, is the new Model 35 saw, introduced recently by the Lombard Governor Corp., Ashland, Mass. Gas powered, the unit is equipped with a new fast chain, and includes trigger control, a direct carburetor connection and Mag-ne-lite parts.

Model 35 cuts closer to the ground. It features an automatic oiler and automatic shut-off, an air filter guard, and a positive chain tightener.

For complete information, address the manufacturer direct, or use the Post Card, located on the colored page in this section. Circle No. 760.

the TASSCO story



"... Gentlemen: Tests for determination of durabiblity characteristics of 6 sets of test panels (signs produced by six different manufacturers) are now complete. It was desired to determine effects when subjected to flexing, resistance to vibration, ability to withstand impact, resistance to salt spray and weathering." *

THE RESULTS REPORTED WERE ANALYZED AND REDUCED TO GRAPHIC FORM. **The bar graph tells the Tassco story!**

Here's proof that Tassco All-Aluminum signs provide more strength, more resistance to deterioration, and more legibility for longer than five other leading makes! Tassco Signs, highly competitive in first cost, are obviously your municipality's finest investment for traffic, highway, road and street use.

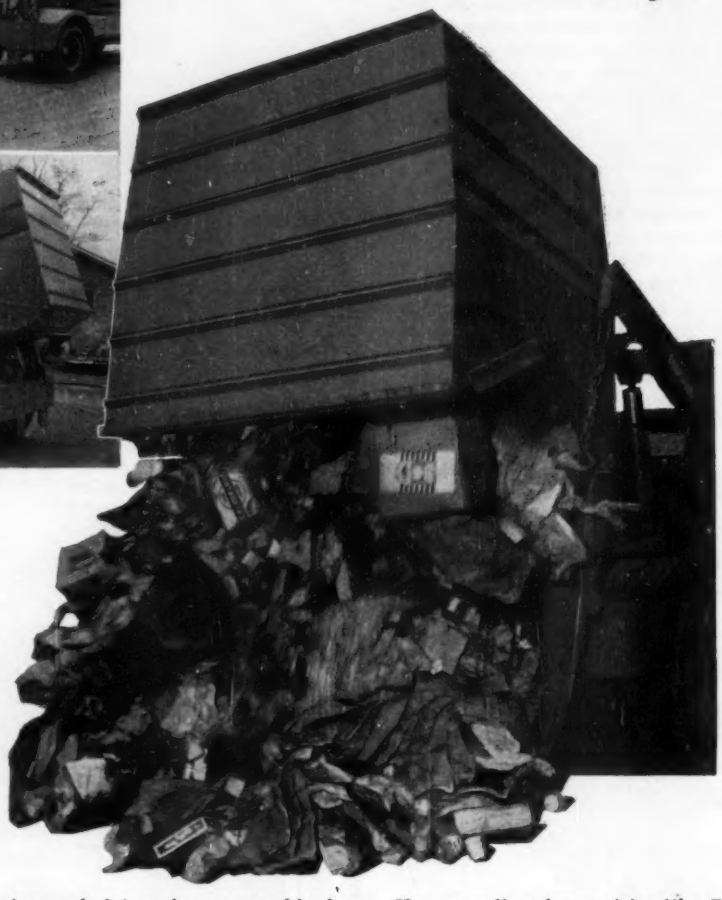
Traffic and Safety officials are invited to write for the new Tassco catalog, and to use the Tassco advisory services without obligation.

*Excerpt from letter of report on tests conducted under the auspices of one of the nation's largest municipalities, under impartial laboratory conditions using standard testing equipment. Report is on file and may be seen on request.

The Sign of TASSCO Traffic Safety

TRAFFIC and STREET SIGN COMPANY
84 FOUNDRY STREET • NEWARK 5, N. J.

ONE Truck and Only ONE Man Handle 15 to 25 Loads of Trash and Rubbish Like This Daily . . .



What you see above is a truck-mounted Dempster-Dumpster picking-up, hauling and then dumping a 10 cu. yd. Dempster-Dumpster Detachable Container. Instead of a conventional truck with loading crew, you have a truck-mounted Dempster-Dumpster with only one man, the driver, handling scores of detachable containers. These big containers replace hundreds of unsanitary cans, crates, barrels, etc. at hospitals, schools, market, housing and apartment areas. And your city has no expense of loading. The loading is done for you by the people who create the rubbish. The Dempster-Dumpster services the containers on pre-arranged schedule—handling 15 to 25 daily, one after another, with one man.

The Dempster-Dumpster is mounted on any make truck chassis of suitable size. One Dempster-Dumpster, operated by only one man, the truck driver, by means of hydraulic controls in cab, does the work of 3 to 5 conventional trucks and crews. This Dempster-Dumpster System eliminates trucks and crews standing idle . . . eliminates re-handling of trash and rubbish . . . increases efficiency and sanitation.

Dozens of average size cities like Pensacola, Tuscaloosa and Lexington, Ky. as well as large cities like Baltimore, Richmond, New York and Pittsburgh have installed the Dempster-Dumpster System. This modern method is saving each thousands of dollars annually plus eliminating rat-infested, unsanitary conditions. Complete information may be obtained by writing direct to Dempster Brothers, Inc.—exclusive manufacturers.

DEMPSTER BROTHERS, 834 Dempster Bldg., Knoxville 17, Tennessee

Purchasing

Introduces Versatile New Microfilmer

The new Recordak Microfilmer photographs fronts and backs of documents side-by-side on the film. Interchangeable lens assemblies provide reduction ratios of 40 to 1, 32 to 1, 25 to 1, and 20 to 1, using 16mm film. At a reduction ratio of 18 to 1, 35mm film can be used with the duplex method to obtain large, side-by-side pictures of the fronts and backs of accounting forms, statistical records, and other material containing numerous closely spaced entries. At the 40 to 1 reduction ratio, the highest available today, as many as 29,000 check-size images, or 28,000 images of 3- x 5-inch card records can be microfilmed on a 100-foot roll of 16mm film.

For complete information about the Microfilmer, which may be purchased or rented by the month, write the Recordak Corp., 444 Madison Ave., New York 22, N. Y., or take advantage of the Post Card located for your convenience on the colored page in this section. Circle No. 775.

Get those Weed **ROOTS!**

Go to the Root of Your Weed Problem with These Dolge Products

Dolge SS Weed-Killer

Where no vegetation whatever is desired such as your parking places, walks and tennis courts. Penetrates deep down to plant roots and kills. Sterilizes the soil, preventing normal sprouting of wind-blown seeds. Weeding the thorough modern chemical way eliminates backbreaking toil and saves the cost of many labor-hours.

E.W.T. *Selective* Weed-Killer (2-4-D)

The efficient way to control weeds on your fairways. Works its way down into the roots of brush, dandelion, plantain, poison ivy, ragweed, sumac and other obnoxious plants, but does not injure most turf grasses.

Please write for descriptive literature explaining how these tested DOLGE products can best be used for YOUR weeding requirements.

dependable DOLGE

WESTPORT, CONNECTICUT

On this modern New York City parkway it's

AMPLEX STREET LIGHTING LAMPS!

MANY OF THE LARGEST American municipalities and public utilities have standardized on Amplex Street Lighting Lamps both for superior lighting and for the extraordinary savings that they bring to every installation. These lamps are specially designed and built to survive the vibration and shock of road traffic and to maintain a maximum percentage of light output throughout their long-burning life.

Amplex offers you the most complete line of street lighting lamps ever put on the market . . . a type and wattage for every kind of service. Among these, Amplex Weatherproof Bulbs are probably today's fastest-growing specification. Amplex Weatherproof Lamps are formed of "hard glass," ending failures due to climatic conditions . . . providing maximum dependability and savings.

For full facts about Amplex Street Lighting Lamps and their superior performance, write Amplex Corporation, Dept. K-3, 111 Water Street, Brooklyn 1, New York.

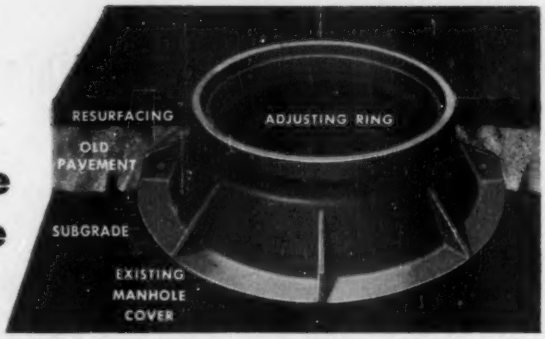
AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

RESURFACING?

then save money with the original NEENAH manhole adjusting rings

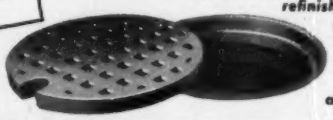
Neenah Foundry adjusting rings boost manhole cover flush with refinished roadway surface — may save as much as 80% of cost of digging and resetting to new grade. Cutaway view shows old manhole frame still in place after resurfacing — thanks to the addition of a Neenah adjusting ring. Available for square and rectangular frames and in standard and special sizes.



Adjusting ring added to existing manhole permits resurfacing for as little as 20% of the cost of replacing or raising existing frame.

Type A adjusting ring with vertical outside surface.

Type B adjusting ring with flared outside surface.



Existing manhole lid sets flush with refinished roadway surface after adding the cost-saving Neenah adjusting ring.

NEENAH FOUNDRY COMPANY Neenah, Wisconsin

Chicago Office 308 W. Washington St., Chicago, Ill.

Write for our 140 page Catalog "R", second edition.

"Iron Cop"

You get these Advantages:

Immediate Delivery — over 1200 Types in Stock
Legible Lettering — Modern Designs
Official Legends — Approved by Dept. of Commerce
Long Lasting — Double baked enamel
Economy — Low cost; easy to install and maintain

Protect Your Children with the Eastern Metal "Iron Cop" — 6-ft. 4" Policeman silhouette in an official blue uniform mounted on a stable iron base; rolls into position easily by a school boy.

Complete line of Highway Signs — reflectorized and plain; also heavy cast aluminum street signs, U-Type steel posts, and durable stanchions.

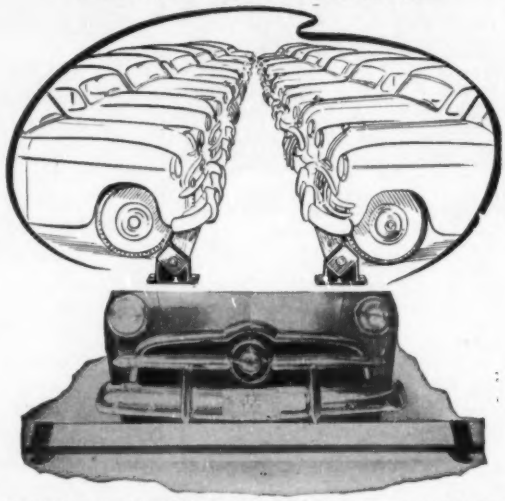
Send for Illustrated Folder and Price List.

Eastern "A" Stand Won't Blow Over
Folds and Locks in Place
Positive Protection to City Workmen

INDUSTRIAL • SAFETY **EM** SIGNS UTILITY • TRAFFIC

EASTERN METAL of Elmira, Inc. Elmira Hts. 1, N. Y.

IDEAL FOR "OFF THE STREET" PARKING
WITH OR WITHOUT PARKING METERS

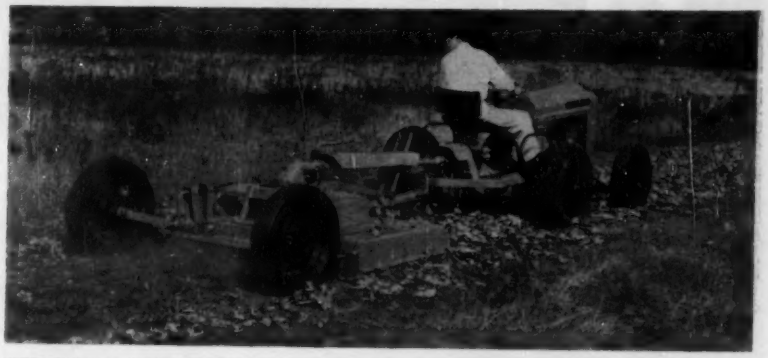


SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, ma - adam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. All Castings are aluminum — no rusting.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS - BARRIER INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA



New Rotary Cutter With Leaf-Mulcher

Any two-plow tractor can be used to pull this new 72-in. power-take-off rotary cutter. Shown here with a leaf-mulching attachment, and drawn by a Worthington Model G tractor with SAE power-take-off, the unit cuts easily through dense overgrowth. The leaf-mulcher reduces leaves and other cuttings into a fine powder, which is then returned to the soil.

Two staggered cutting bars eliminate uncut streaks, while large, 6:70 x 15 drop center wheels provide maximum flotation. These wheels are individually adjusted for heights, from the ground to 10 inches, by two fast-acting cranks.

Request further information from the Worthington Mower Co., Stroudsburg, Pa., or take advantage of the Post Card located for your convenience on the colored page in this section. Circle No. 754.

International Harvester To Make 2-Wheel Tractor

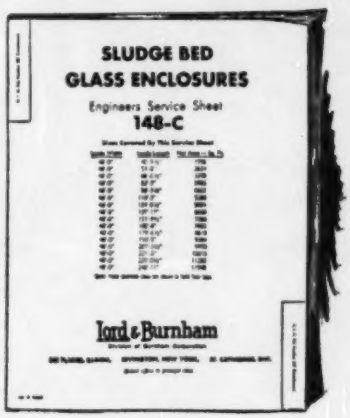
Two-wheel rubber-tired industrial tractors for use in heavy construction work, will now be manufactured by the International Harvester Co., according to recent reports. This latest addition to the company's line is the result of a new contract under which Harvester acquires patents, designs, and manufacturing data on 2-wheel tractors from The Heil Co. of Milwaukee, Wis.

The announcement, issued jointly by Joseph F. Heil, president of The Heil Co., and Harald T. Reishus, vice-president of International Harvester, and executive head of the firm's industrial power division, further states that Heil will supply Harvester with 2-wheel tractors for an interim period, until Harvester can begin operations. During the period of the agreement which continues for a number of years, Heil will also provide the company with certain types of scrapers and wagons.

The 2-wheel tractors with scrapers or wagons, formerly known as "Heil-iners," will be sold through Harvester's industrial power division and distributors, under the trade name "International." Located at 180 N. Michigan Ave., Chicago 1, Ill., the International Harvester Co., also manufactures diesel engines, crawler tractors and earth-moving machinery.

GLASS COVERS for SEWAGE TREATMENT PLANTS

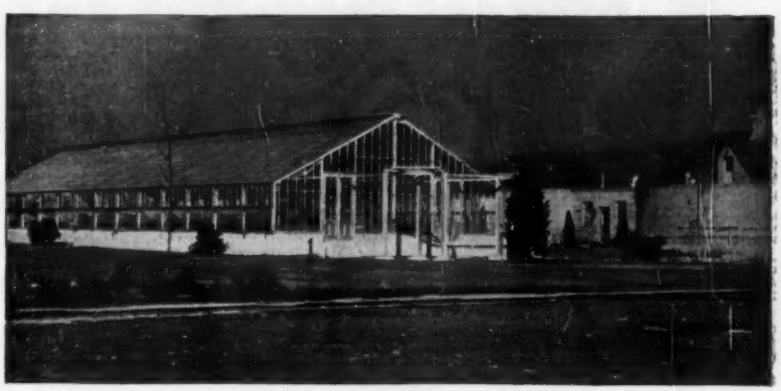
Sludge beds, sprinkling filters, tanks or wherever a glass cover is needed.



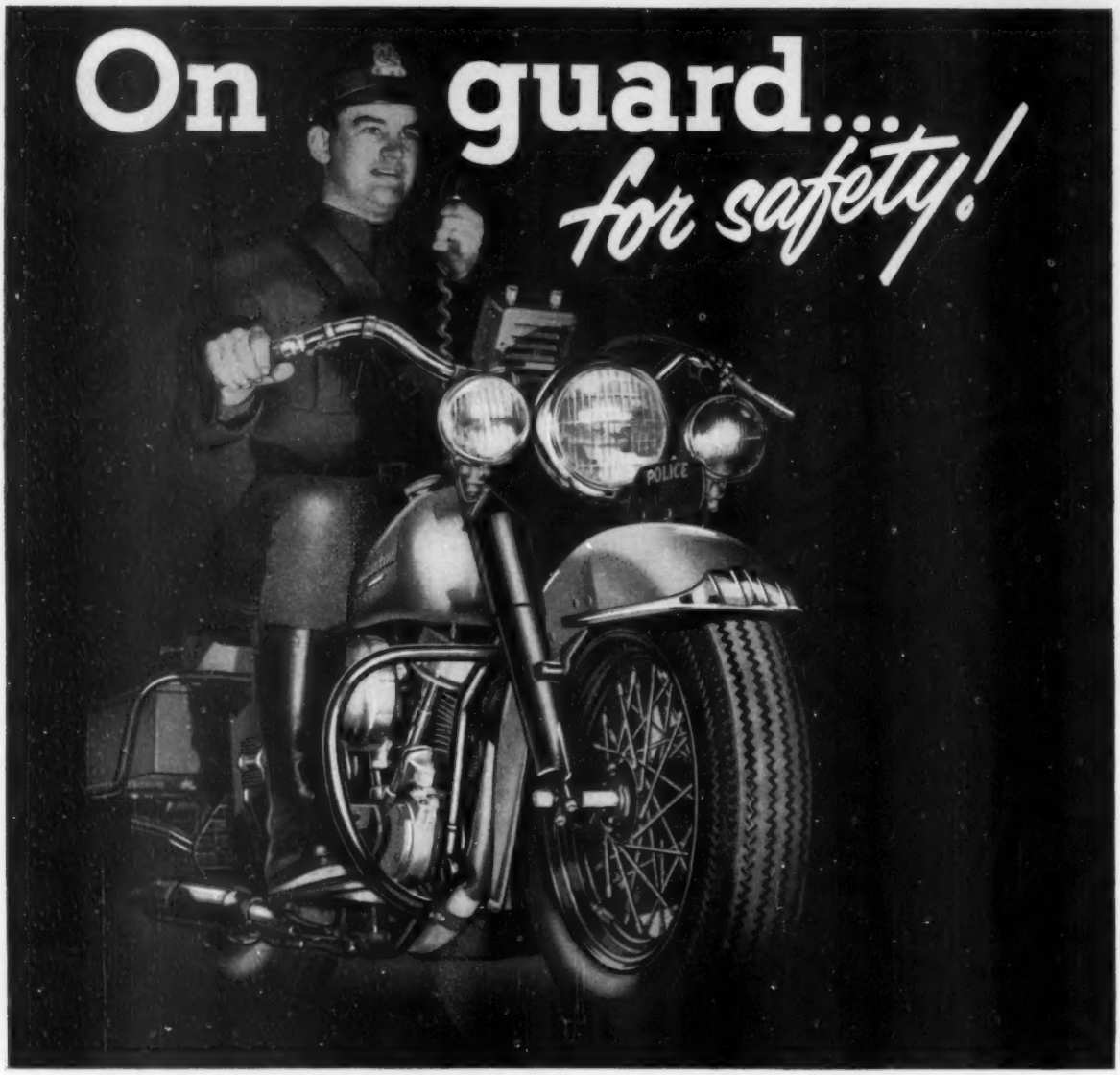
Send for These Valuable Engineers Service Sheets

Set of six Engineers Service Sheets furnished on request. Contain details, specifications and recommendations to suit individual job requirements.

Lord & Burnham
DIVISION OF BURNHAM CORPORATION
IRVINGTON, N. Y. DES PLAINES, ILL.



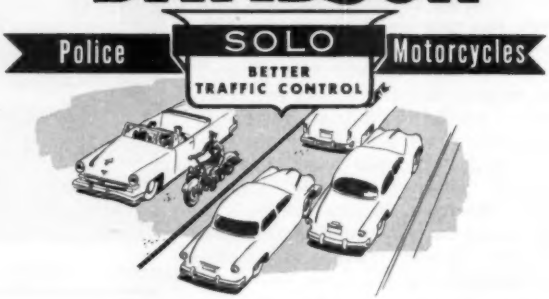
Typical Sludge Bed Glass Cover



Control peak traffic with officers mounted on HARLEY-DAVIDSON

HERE'S the proven way to tighter traffic control during spring and summer's peak motoring. Mount your traffic officers on solo Harley-Davidsons. Motorists respect the speed, the maneuverability, the power that enables a motorcycle officer to apprehend violators . . . and they drive accordingly.

Yes, these sturdy two-wheelers will keep motorists in line in your city, large or small. Get the facts about the Golden Anniversary models from your Harley-Davidson dealer today. And ask him for your free copy of the valuable, illustrated booklet—"More Effective Police Power." Or, write Harley-Davidson Motor Co., Milwaukee 1, Wis.



Facilitates Indoor Cleaning of Public Buildings

Cleaning the inside of city halls, schools, hospitals and other public buildings is faster and easier with this special Model 816 Twin Tank Mopping Outfit, introduced by Geerpres Wringer, Inc. Known as the Floor-Knight, it is designed to accommodate smaller size mops ranging from 8- to 16 ounces.

A feature of the Floor-Knight developed to increase the life of the mop, is the new side and gear cover enclosing the wringer gearing. The mops slide easily in and out of the Geerpres Wringer and, with the exception of the pressure plates, are protected against moving parts. Water is squeezed down and out of the mop by the pressure bars spun at both ends into the double-staggered gears of the wringer.

Detailed literature describing the Floor-Knight, the Floor-King for 24- to 36-oz. mops, and the Floor-Prince for 16- to 24-oz. mops, is available from Geerpres Wringer, Inc., Muskegon, Mich. Write directly, or take advantage of the Post Card on the colored page in this section. Circle No. 745.

To Attract New Industries

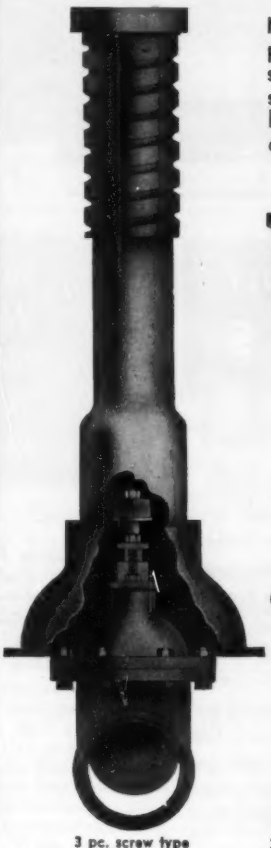
USE

FROM THE STATE CAPITALS

reports to keep in touch with the industrial promotion steps being taken by other cities and states. Coverage of other topics also available, according to your specialized needs. For details, write . . .

Bethune Jones
234 River Rd.
Red Bank, N. J.

"BUFFALO" Municipal Castings come in every size and style!



No matter what your needs may be, you're pretty sure to find a "Buffalo" casting to serve the purpose, whether it be in valve, service or roadway boxes, meter boxes, manhole rings & covers, or other municipal castings.

If you need special castings, either gray iron or non-ferrous, let us give you a quotation.

Write or wire for Bulletin M11

3 pc. screw type 5¼" valve box.

2 pc. sliding type adj. 5¼" valve box

2½" water or gas ext. service box

Extra Heavy Traffic 2½" or 3" service box

All the new designs of "Buffalo" boxes are interchangeable with older "Buffalo" boxes—another big advantage of always insisting on "Buffalo" municipal boxes and castings.

BUFFALO PIPE & FOUNDRY

BUFFALO PIPE & FOUNDRY CORP.

BOX 55—STATION B DE. 6764 BUFFALO, N. Y.

NO RAMMING OR JAMMING! NO SPINNING OF WHEELS WHEN LOADING BULKY OR "PACKED" MATERIALS

LESSMANN LOADALL

DIGS IN WHILE STANDING STILL!

Check these features!

- **STANDARDIZED PARTS.** Ford, Timken, Vickers, Bendix, etc., assure highest quality components and low-cost servicing.
- **SAFETY.** Operator has unrestricted visibility and is protected from loader arms.
- **EASY HANDLING.** Full reverse shifting gives LOAdALL four speeds forward and four reverse. Three simple, conveniently located hydraulic controls assure efficiency.
- **LOW COST.** You save on first cost, operating costs and maintenance costs with a LOAdALL.
- **LOAdALL BUCKETS.** Available with capacities of ⅛, ¾, ⅞, 1, 1¼ and 1½ yards.

A HIGHLY MANEUVERABLE POWER SHOVEL

Lessmann LOAdALL scoops up big loads of the most heavily compacted soils, cinders, aggregate, etc. . . . does it in 5 seconds while standing still! Extra hydraulic cylinders supply Hydraulic Power Crowd. This means *loading* with hydraulics which eliminates ramming and spinning of wheels . . . ***minimizes repairs, reduces maintenance!*** Dozer blade is easily attached for grading, backfilling. Crane-hook, lift forks, snow and trash buckets are also available.

9 FT. DUMPING CLEARANCE

LOAdALL has clearance for the highest trucks, bins and mixing hoppers. It loads or unloads at any height from 12" below wheel level to 108" above. Wheelbase of 73" and 12' turning radius make it highly maneuverable.

52" REACH

Here's a full 4'4" reach at maximum clearance! LOAdALL carries load close but quickly boosts it *'way out ahead* for easier loading . . . another advantage of Hydraulic Power Crowd.

HYDRAULIC POWER-CROWD

LESSMANN MANUFACTURING COMPANY

Affiliate of United Steel Barrel Co., Philadelphia—Wilmington, Del.

2008 Easton Blvd., Des Moines 4, Iowa

Write for Complete Information TODAY!

ALL-AMERICAN HEAVY-DUTY

PICNIC GRILLS

Stationary style for permanent installation **$35.75** Weight 160 lbs. PATENT PENDING

Portable Model as Illustrated, Complete **$43.75** Weight 185 lbs.

Features Not Found In Any Other Grill

Built just like a small, complete cooking range. Positive 6-way draft control gives faster, easier kindling, saves fuel, insures tenderer, juicier steaks, chops, barbecues. Cooks, bakes, warms—burns charcoal, wood or coal. Grill revolves to permit cooking to windward. Cast of heavy stove iron with steel pipe support, for lifetime service. Shipped fully assembled.

★ *Write for Literature on All-American Picnic Grills, Heavy-Duty Picnic Tables, Park Benches and Chain Link Tennis Nets*

AMERICAN

PLAYGROUND DEVICE CO., ANDERSON, IND.

WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC, PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

LONGER RANGE—TARGET VALUE FOR YOUR HIGHWAY TRAFFIC SIGNS WITH GROTELITE REFLEX REFLECTIVE SHEETING

Grotelite REFLECTIVE SHEETING

SMOOTH S S SURFACE

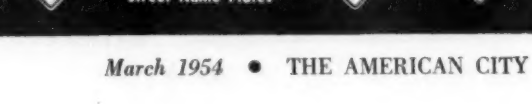
This highly reflective, smooth surface reflex reflective sheeting makes a smashing, attention-compelling sign with longer range target value and full range legibility. Easily read night or day. The smooth, durable, self-cleaning surface can be screened, sprayed or brushed. It is easy to apply and makes the best long life, economical signs and markers. Available in sheets and completed signs.

THE Grote MANUFACTURING CO., Inc.

GROTE SQUARE - BELLEVUE, KY.

(Established 1901)

Complete Line of Embossed Metal Traffic Signs, Reflectors and Street Name Plates



New Type Park Benches

Enhancing the landscape along the Charles River embankment in Boston, Mass., is this new, long-wearing park bench fabricated of wood planking attached to ½-in. wrought iron plate.

Like similar benches located in the Charles River Reservation, the unit combines first quality native oak slats with a wrought iron supporting structure. The Byers wrought iron plate protects the bench against early deterioration from corrosion, despite constant exposure to the salt air atmosphere.

Landscape architects Shurcliff & Shurcliff, Boston, designed the benches for the Parks Div., Metropolitan District Commission, Commonwealth of Massachusetts. They were fabricated by the A. F. Robinson Boiler Works, Cambridge, Mass.

For complete information on Byers wrought iron plate, address the A. M. Byers Co., Clark Bldg., Pittsburgh, Pa., or you may use the Post Card on the colored page in this section. Circle No. 755.

MANUFACTURER'S REPRESENTATIVES WANTED

to sell to counties, cities and towns—

a complete line of Traffic Signs utilizing Reflexite, the reflecting material now used on super highways such as Merritt Parkway, New Jersey Turnpike, etc. Also barricades, delineators, street name signs and traffic paint.

For complete information, write to

Reflexite Corp.

63 Wall Street, New York 5, N. Y.

SAFE-T-CONE

ALL-RUBBER TRAFFIC GUIDES ®

Patent Pending

for **EFFICIENT TRAFFIC CONTROL**

During emergency street repair or the traffic rush hour . . . Safe-T-Cones are constantly on duty . . . guiding traffic safely thru congested areas. Used by traffic engineers from coast to coast, Safe-T-Cones are the answer to modern traffic problems. Available in two sizes, 18 inch and 28 inch, painted or reflectorized.

Write for complete information.

RADIATOR SPECIALTY CO.
CHARLOTTE, NORTH CAROLINA
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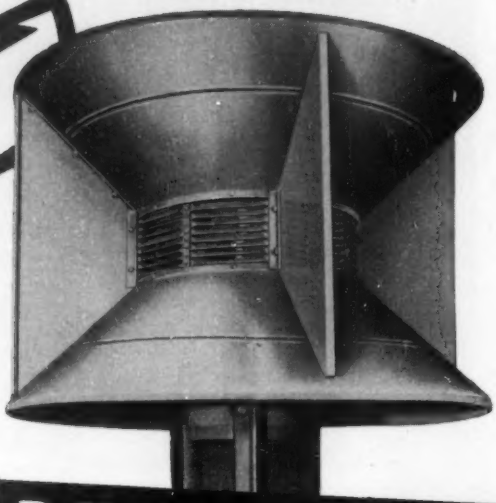
2011

FEDERAL
SD-10



DUAL-TONE
AIR RAID WARNING SIGNAL

"All air raid sirens purchased under the 1954 matching-funds program for air raid warning devices must be dual-tone"

The Federal SD-10 siren is the new double tone version of Federal's STL-10 siren used so successfully by the City of St. Louis for air raid protection.

The SD-10's exterior features, modified to enhance the dual-pitch sound waves, conceal but do not eliminate any of its advanced principles of design. The SD-10 gives you greatly increased sound output without increased power consumption, more effective inverted design and simplified mounting. Truly a siren worthy of becoming a partner with other famous Federal Sirens designed for Air Raid applications.

Write today for full facts -- ask for Bulletin No. 6

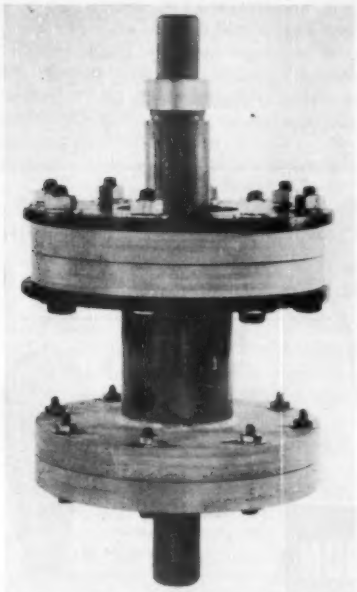
FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8756 S. STATE STREET CHICAGO 19, ILLINOIS

Purchasing

Automatic Proportioning For Chlorinators



Fischer & Porter Automatic Proportioner replaces ratio controllers, complex transducers, and pressure transmitters.

Feed chlorine to water or sewage lines in a direct and preset proportion to the flow rate with this ew corrosion-resistant automatic proportioning component for chlorinators. Developed by the Fischer & Porter Co., 20 Jacksonville Rd., Hatboro, Pa., the unit handles the whole proportioning job at less cost, eliminating the need for expensive ratio controllers and complex transducers or pressure transmitters.

The new component is operated by differential pressure emanating from an orifice plate. Once an initial setting for a desired proportion of chlorine is made manually on the chlorine rate valve, the automatic proportioner is ready to take over.

Fischer & Porter automatic proportioners are available with the company's standard and high-capacity vacuum-type solution feed chlorinators, and are easily incorporated for conversion from manual rate adjustment before shipment, or after the chlorinator has been in use. They come in two standard differential ranges: 0-50 inch and 0-100 inch water column.

For additional information about the Fischer & Porter Automatic Proportioner, write the manufacturer direct, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 773.

Catch Basins

CAN NOW BE CLEANED RAPIDLY AND INEXPENSIVELY WITH THE

Pippin

EXCAVATOR

LOWER COST + INCREASED SPEED = GREATER SAVINGS

The Catch Basin Attachment for the PIPPIN Excavator fills a long recognized need for a fast, inexpensive method for cleaning catch basins, which will not tie up a large investment in single-purpose equipment that is to be used only occasionally.

This attachment mounts on a standard PIPPIN Excavator. Maximum efficiency is achieved through complete hydraulic control. With the dipper stick of the Excavator fastened in position, the dipper stick cylinder is now used to operate the cable and sheave mechanism which rapidly lowers the orange peel bucket to a maximum depth of 19½ feet into the catch basin. The bucket, opened and closed by a double acting cylinder, is easily filled and raised to 9 feet above ground for loading directly into a truck.

Mounting or dismounting this attachment is a simple operation, requiring only an hour or so. This means that this versatile Excavator can be kept in continuous use on a wide variety of jobs.

The Most Versatile Piece of Equipment Your Money Can Buy

1. Backhoes 10 ft. deep
2. Backfills
3. Cleans Catch Basins
4. Holds Rock Drill
5. Installs Culverts
6. Digs Drainage
7. Grades Roadsides
8. Cleans Ditches
9. Shovels
10. Loads 12 ft. High
11. Digs Graves
12. Lifts Heavy Pipe

Write For Complete Information

PIPPIN CONSTRUCTION EQUIPMENT, INC.

White River Junction, Vermont

Install KARPARK meters FOR EFFICIENT TRAFFIC CONTROL

Wise administrators of municipalities, from large metropolitan cities to small towns, have found the answer to the complex problem of parking with the dependable KARPARK meter system. Both the KARPARK TWIN-O-MATIC and UNIMATIC meters have been engineered for efficiency of operation and true economy. Used independently or in combination, they'll fit the particular requirements of your own community.

Tick off these KARPARK features against your needs:

FLEXIBILITY

KARPARK meters can handle various coin combinations, depending on your requirements, and can be made to indicate violations at time intervals specified by you.

EFFICIENCY

KARPARK meters are superbly built by The Herschede Hall Clock Company, makers of America's finest clocks. They're simple to operate, and their high visibility makes enforcement easy. And they're ruggedly constructed to give accurate timing in all kinds of weather.

ECONOMY

KARPARK meters are economical because they provide substantial savings in maintenance, replacement, and law enforcement.

KARPARK TWIN-O-MATIC

Times two cars with one installation. Adjusts to any desired change in regulations. Reduces maintenance and collection costs to unheard-of lows. Ruggedly built for long life.

KARPARK UNIMATIC

For single car parking. Can be used for an entire system of single car parking, or, when used with Twin-O-Matic, can be placed at street ends and special single locations.

Available with
Sealable Boxes
Open Top Boxes or
Automatic Dump System

For complete data, write to

THE KARPARK CORPORATION
CINCINNATI 6, OHIO

In Canada —
TWIN METER CO. OF CANADA, LTD.
1224 Ropery St., Montreal 22, Quebec

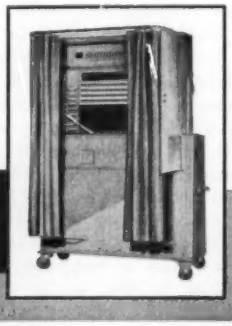
13th in a Series

EAST ST. LOUIS, ILLINOIS VOTERS Like Their AUTOMATIC VOTING MACHINES

"Voting machines 'paid off' in last Tuesday's election, the first city election in which the devices were used exclusively in all precincts. Election officials, candidates, newspapermen and the general public all have testified to the lack of confusion and the rapidity with which the returns were made available. It was a remarkable performance."

Editorial —
E. St. Louis Journal
4-5-1951

East St. Louis uses 118
Automatic Voting Machines



AUTOMATIC VOTING MACHINE CORP.
JAMESTOWN, NEW YORK

Improved Handling of Casualties

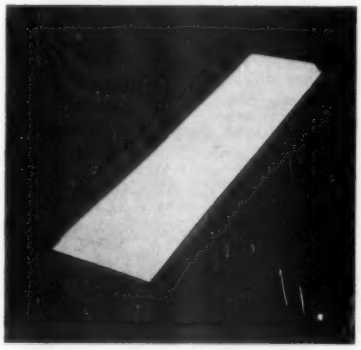
This company announces an aluminum combination litter and bed for emergency use by police and fire departments, city hospitals, and civil-defense workers. Light weight, the units are extremely adaptable and may be used both as stretchers and as standby hospital beds that you can stack in tiers like bunk beds.

An interesting feature of the litter-cot is that it converts any load-carrying vehicle into an ambulance. You simply stack the units against the walls of the vehicle, placing an adjustable bracing bar between the two rows of litter-cots, and they stay in place. An aluminum irrigation rod that holds plasma bottles can be attached to any of the unit's four legs.

Designed by the Simmons Machine Tool Corp., with the aid of the Aluminum Company of America, the combination stretcher and cot can be used comfortably for extended periods as a bed. It is four inches wider than the conventional litter, and is equipped with a strong canvas sling. The legs may be folded under or extended.

Full information on the versatile litter-cot is obtainable from the Aluminum Company of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa. Write directly, or use the Post Card in this section. Circle No. 758.

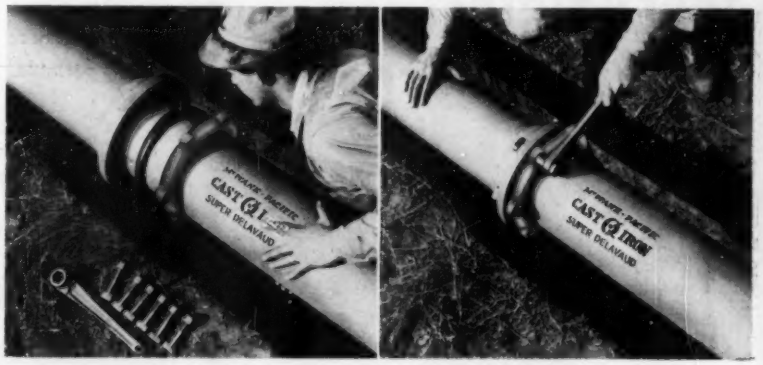
Special Interior Luminaire Suitable for All Public Buildings



When the world's tallest building wanted a new fluorescent luminaire "to fit its structural personality," Luxor Lighting Products, Inc., produced the "Empire State luminaire" which was accepted and installed. Meeting these high requirements make it suitable for use in any public building.

The luminaire, of steel with white enamel finish and a Plexiglas diffuser which is specially treated to minimize dust adherence, contains two 40-watt lamps. Four-lamp units are also available. Mounting can be flush or with stems and canopy. The entire frame swings down for easy access to lamps and ballasts. The Empire State luminaire is one of many custom fixtures designed by Luxor Lighting Products, Inc., Empire State Building, New York, N. Y.; a company well known among municipalities for its long-burning street lamps, traffic lamps and its system of balanced light by which wattage is fitted to actual lighting and color requirements.

Information about all these lighting products, including the Empire State luminaire, is available from the manufacturer. Write directly, or use the Post Card on the colored page in this section. Circle No. 750.



EASY TO LAY

WITH UNTRAINED LABOR

SAVES TIME
REDUCES COSTS

McWane-Pacific Boltite mechanical joint pipe and fittings lay faster and reduce pipe line construction costs because the joints can be made by untrained workmen using only a ratchet wrench. Boltite is a better joint for either water or gas. Bottle-tight, leak-proof, yet flexible to allow settlement, or expansion and contraction of the pipe line.

All joint parts, glands, gaskets and bolts are interchangeable with pipe, fittings, valves and hydrants made by other manufacturers. For complete information, wire or write McWANE CAST IRON PIPE COMPANY, Birmingham, Alabama, or PACIFIC STATES CAST IRON PIPE COMPANY, Provo, Utah. (Sales offices in principal cities.)

McWANE PACIFIC PIPE *Lasts for Centuries*

FIRST

. . . and Best!

TODD INSECTICIDAL FOG APPLICATOR

TIFA

Successfully Used for over 8 Years in Community Fly and Mosquito Programs

Tifa was first in the field of fog applicators. Tests have proved it best in the field for space control around the community . . . on the dump, over pools, in suburbs, everywhere insects swarm!

This amazing machine discharges newly-developed insecticides as well as the older types in a true, clean fog which spreads quickly and permeates the deepest crevices. This ability means a better insect control program for your community. Put Tifa to work for you!

Efficiency Features

Uses insecticides in solutions, emulsions or suspensions.

Produces penetrating fog, dry or wet as you wish.

Droplet Control ranges from ½ to 200 Microns.

CARRYING
Underwriters' Listing Seal

Write for illustrated folder with full details and official comments.

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
81-16 45th Avenue, Elmhurst 73, New York

THE Ametron SPEED METER

takes the guessing out of catching the speeder on the highway.

It tells at once the exact rate at which the driver is traveling.

Takes only a few minutes to set up. So simple its maintenance cost is very low. So compact it is easily portable. Best of all—its low cost will surprise you.

Police officials who have tried it out are enthusiastic over its effectiveness.

Write for illustrated brochure

STANDARD OF ACCURACY SINCE 1888
STREETER-AMET COMPANY
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS
Branches in Pittsburgh, Pa., Allentown, Pa. and Birmingham, Ala.

Immediate Delivery on the NEW UNITED

ROUND TOP RECEPTACLE

R-1536

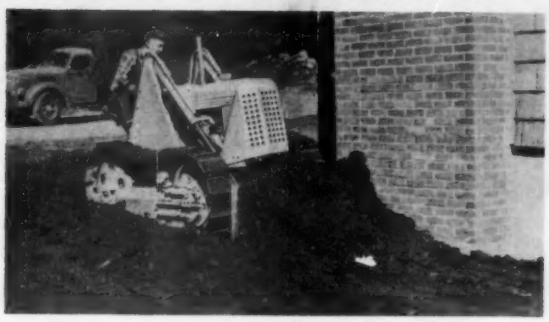
It Tops Them All!

BEAUTY...Best-looking waste receptacle of its kind ever made.
ONE-PIECE CONSTRUCTION...Outer shell electrically welded throughout of heavy gauge furniture steel.
SELF-CLOSING CHROME PLATED DOOR . . . Dependable action.
SANITARY WHITE heavy enamel finish baked on at high temperature. Also Hammertone Green, Gray and special colors. BONDERIZED.
DURABILITY...Like other United receptacles it will set records for long service.
FEATHERWEIGHT LIGHTNESS... Finger-tips easily lift outer shell to expose galvanized steel inner container.

UNITED ®
Write for Catalog

UNITED METAL BOX CO., Inc.
172 Seventh St., Brooklyn 15, N.Y. SOuth 8-6700
West Coast Distributor: Shoreline Metals Co., Los Angeles, Calif.

Year-Round Use Stressed in New Tractor-Loader



New OC-3 Tractor-Loader is easily converted to a bulldozer.

Equipped with the new Model 3-WI hydraulic loader unit, Oliver's OC-3 Industrial Crawler Tractor has been transformed into the OC-3 Tractor-Loader, and is available with a variety of attachments, changing it still further into a bulldozer, backfiller, lifting boom, lifting fork or snow plow.

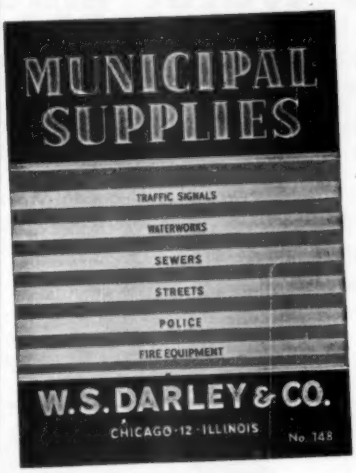
As a tractor-loader, the Model OC-3 offers extreme bucket rotation, facilitating dumping from the ground level to the full lift height. The bucket angle in dump position is 75° from level at ground level, 55° from level at full lift height. Full lift height is 10 feet 9 inches with bucket level, while the loading height at bucket hinge point is 9 feet, 5 inches. This exceptional rotation enables the ½-cubic-yard, 2,000-pound-capacity bucket to dig 16 inches below track level. It further permits use of the bucket in leveling, scraping and stripping operations.

Transporting the tractor-loader from place to place is easy with a light trailer or truck. Attachments are added to the basic loader arms without tools.

Write The Oliver Corp., 400 W. Madison St., Chicago 6, Ill., for additional data, or you may use the Post Card on the colored page in this section. Circle No. 759.

With the aid of another attachment, the unit is transformed into a lifting fork.

NEW CATALOG!



WRITE TODAY
For
100 PAGE
MUNICIPAL CATALOG

W. S. DARLEY & CO.
CHICAGO 12

NEW AMERICAN ELECTRIC STAMPING RECEIPTOR

American Model 200, completely portable, measures 8" by 12". Weighs only 16 lbs.

Affords Greater Teller Efficiency

Model 200, featuring easy one-hand operation, with positive guard against teller return of accounting stub, makes this receiptor the most capable model available today.

LOOK AT ALL THESE FEATURES:

- Paper insert trip that does everything instantly and simultaneously.
- Stamps bill PAID, dates payment, identifies receiving teller.
- Severs stub from receipt and drops it in stub collecting compartment.

No buttons to push
No spools to change
No levers to pull

Fixed type can't fall out.
Easy and clean date changing mechanism.
Use with card, paper or IBM tabbed bills.
Continuous ribbon.

Sales and Service in Principal Cities
AMERICAN PERFORATORS... SINCE 1910

The American Perforator Company Receiptor Div.
625 West Jackson Boulevard, Chicago, Illinois
Gentlemen: Please send me complete information on the New American Stamping Receiptor.

Name_____
Firm_____
Address_____
City_____ State_____

17-mile water line to supply City of Colorado Springs, being laid in high terrain near Florissant, Colo. Bethlehem supplied a total of 4000 tons of steel pipe for this project. *Contractor:* Hutcheson Construction Co., Denver; *Consulting Engineers:* Black & Veatch, Kansas City, Mo.

High-Strength Steel Pipe Saves $222,000 on 17-Mile Water Line

The City of Colorado Springs, Colo., saved taxpayers a barrel of money in laying this new 30-in., 17-mile-long water line by using high-strength Bethlehem steel pipe at points of extreme stress.

In areas of normal water pressure Bethlehem Tar-Enameled Pipe in the standard grade of carbon steel with a yield point of 30,000 psi was entirely satisfactory. But the line was laid over a rugged terrain, and at some locations the water pressures ran as high as 800 psi. Standard carbon-steel pipe used under such pressures would have required walls as thick as ⅞ in., resulting in excessively heavy pipe, prohibitive in cost and difficult to handle.

The design engineers found the answer in using two grades of high-strength steel pipe in high-pressure locations: (1) Pipe of special carbon steel, with a minimum yield point of 42,000 psi; and (2) Pipe of Bethlehem's low-alloy Mayari R, with a minimum yield point of 50,000 psi.

In this way wall thicknesses were kept down to a range of from ¼ in. to ½ in., and total steel requirements for the line were reduced by approximately 1800 tons, a saving in steel alone of $222,000!

This saving in weight also meant lower shipping and welding costs, and greatly simplified handling in the field.

If you have a water-line problem involving high heads, perhaps you could use a high-strength grade of Bethlehem Tar-Enameled Steel Pipe to advantage. Bethlehem pipe comes in all diameters from 22 in., to the largest permitted by common carriers, and in any wall thickness required, for any water- or sewage-carrying application. It is readily joined in the field by welding, mechanical couplings, or riveting. Straight lengths are generally furnished 40 ft long.

Every Section of Bethlehem Steel Pipe Is Tested In Accordance with AWWA Specifications

This hydrostatic test is, in most cases, equivalent to 200 pct of the working pressure, assuring you that Bethlehem Steel Tar-Enameled Water Pipe meets AWWA requirements for strength and water-tightness.

BETHLEHEM STEEL COMPANY

BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM *Tar-Enameled* WATER PIPE

Improved Hand Dryer for Public Washrooms

New type air baffle on the C Model Electric-Aire Hand Dryer features non-breakable baffle guards.

In addition to drying hands faster, the electric dryers installed in public washrooms should feature dependable, low-cost operation. One such unit is the new Model C, improved by the Electric-Aire Engineering Corp. to include increased air velocity and volume, a permanent type air filter, and a touch-action starter bar.

The new "C" Model Hand Dryer has a revolving air baffle with non-breakable baffle guards, electric lighted instructions for efficient drying, and improved vandal-proof permanent air-filter. These dryers, provided with life-sealed ball bearings and circuit heater, require a minimum of maintenance, remaining on the job around the clock.

The Electric-Aire Engineering Corp., 209 W. Jackson Blvd., Chicago 6, Ill., will send full information on request. Write directly, or use the Post Card located on the colored page in this section. Circle No. 765.

ROADMASTER
Street Sweeper
WIRE

High Scleroscope Rating
Uniform temper.

Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON
Steel & Wire Co., Inc.
WORCESTER 1, MASS.
New York Philadelphia Pittsburgh
Cleveland Detroit Akron Chicago
Atlanta Houston Tulsa
Los Angeles Toronto
A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

New Portable Dryer

H&B ESTABLISHED 1887
makes the
Moto-Patcher
A Highly Efficient Hot Mix Plant

The addition of this new portable dryer makes the H & B Moto-Patcher a highly efficient hot-mix plant for all types of patching, including building up weak shoulders, also for use on driveways, parking areas and other small paving jobs.

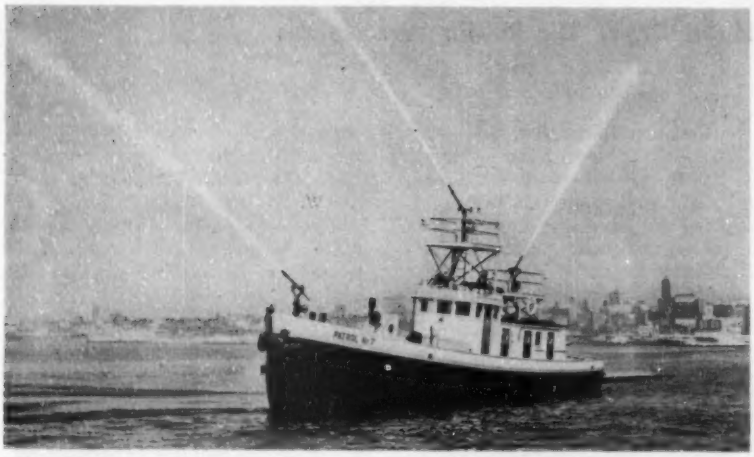
The dryer drum is 8 ft. long by 30" diameter, with a drying capacity up to 10 tons per hour. Aggregate may be fed by hand or directly from truck by means of a small chute attached to the tail gate. There is a towing hitch for readily attaching to any standard make truck.

New
Spreader Attachment

This spreader attachment, which is optional equipment with the Moto-Patcher, is 8 ft. wide and is fully adjustable to specified grade and crown, insuring a uniformly smooth surface even on irregular pavement.

Bulletin MPD-53 gives complete information on the Moto-Patcher, Dryer and Spreader. See your local H & B distributor or write direct.

HETHERINGTON & BERNER INC.
America's First Builders of Asphalt Mixing Equipment
737 Kentucky Avenue Indianapolis 7, Indiana



Chief Harborman J. A. Burns is at the wheel of Patrol No. 7, a 65-foot long converted Army T boat, during a test of pumping equipment in Seattle Harbor.

Converted Army Boats Patrol Seattle Waterfront

Patrol No. 7, a converted Army T boat 65 feet in length with a 16-ft. beam, is one of the five patrol boats operated by the City of Seattle, Wash., to police its waterfront, regulate harbor traffic, and help fight waterfront fires. Diesel-powered, the craft was recently equipped with a General Motors 6-110 Diesel, giving her a maximum cruising speed of nine knots at 1,000 engine rpm. The engine turns at a 43- x 34-in. wheel through 3:1 reduction.

An 8-in. centrifugal pump designed by the DeLaval Steam Turbine Co., Trenton 2, N. J., is driven by a General Motors Series 71 Diesel. Using three monitors, 2,000 gallons of water per minute can be delivered at a pressure of 90 pounds. Evans Engine & Equipment Co. of Seattle installed the new propulsion unit.

Detailed literature describing General Motors Diesels may be had by writing the Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Dr., Detroit 28, Mich., or you may use the Post Card located on the colored page in this section. Circle No. 741.

New Street Broom Wears Longer

Sanitation officials interested in a good, heavy-duty street broom, can get one that is filled with thick tufts of long-wearing Bass-Tex plastic bristles. This new broom is called the Oxco Dura-Wear, and is available in 14- and 16-in. sizes. The plastic bristles have 4¾-in. trim.

According to the Ox Fibre Brush Co., Bass-Tex bristles are resistant to moisture, thus, stay free of dirt. They

HARDIE

FOR *AERO-MIST*

SHADE TREE PROTECTION and MOSQUITO CONTROL

No drip—no run-off—spray when and where you want to with Hardie Aero-Mist. Records show more than 50% saving in labor and material cost by Aero-Mist concentrate spraying. Big volume, high velocity air stream carries the spray to the tops of the tallest trees. Official tests show mosquito killing horizontal coverage up to 1,000 feet.

TWO SIZES

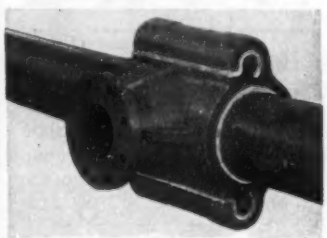
Model L40—4,000 to 5,000 cu. ft. air per minute at 130 MPH. Model L80—8,000 to 10,000 cu. ft. air per minute at 150 MPH. Write for complete data.

HARDIE
PEST CONTROL EQUIPMENT
• SOLD AND SERVICED

The Hardie Manufacturing Company,
Hudson, Michigan.
3825 Santa Fe Ave., Los Angeles 58, Calif.
1435 N.W. Northrup St. Portland 9, Ore.
Please send catalog.

Name_____
Address_____
City_____ State_____
I am especially interested in_____

NOW!! the *New*
BOLTLESS
TAPPING SLEEVES



for CAST IRON PIPE
for CEMENT-ASBESTOS PIPE

Top economy in installation and maintenance because NO CAULKING NECESSARY—allows even unskilled workmen to do faster, better installations. LESS EXCAVATION and MORE WORKING AREA through new, simplified mounting process. Assured LIFE OF PIPE SERVICE.

QUALIFIED DEALERS AND DISTRIBUTORS WANTED IN KEY AREAS

Write for full information TODAY!

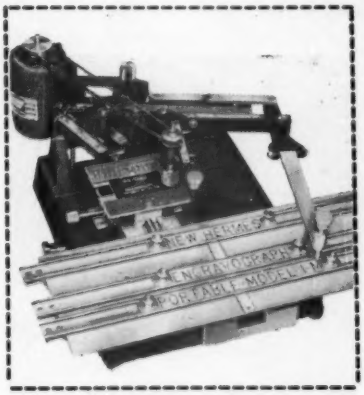
COREY MFG. CO.
3279 Verdugo Rd., Dept. 28
Los Angeles 65, Calif.

engrave
your own
signs

MARKERS

NAMEPLATES

right on the premises



Portable machine, so simple to operate by anyone

- Make permanent attractive signs at less cost.
- Engraves on plastics, wood or metals.
- Tested and approved by City Departments.

For complete information write Dept. 87

NEW HERMES
ENGRAVING MACHINE CORPORATION
13-19 University Place • New York 3, N.Y.

are not affected by most liquids, and won't rot, sour or mildew.

Detailed literature describing Dura-Wear brooms is available from the manufacturer. Write Ox Fibre Brush Co., Frederick, Md., or use the Post Card on the colored page in this section. Circle No. 761.

The broom's new Bass-Tex plastic bristles also speed sweeping time.

General Maintenance Work Made Easier

Many city officials are discovering the advantages of using this new basic bulk-handling tool, with its 12 cubic foot bucket, to care for a variety of general maintenance jobs. The Model 20 Shoveloader not only lifts 1,500 pounds of bulk materials to a 7-ft. height, it turns at a 90-in. radius as well, facilitating close inside and outside work. It is easily switched from loader bucket to lift forks, or a special bucket and crane hook.

Good forward visibility is provided by suspension of the loader bucket in a low travelling position. The loader boom remains in front of the operator, protecting him from injury. He is, in addition, offered full-circle visibility.

Gasoline powered, with four forward speeds and one reverse speed, the Model 20 can attain a travelling speed of up to 14 mph. Special catalytic equipment destroying exhaust gases, is available for inside work.

Form No. AD-60 contains a complete description of the Model 20, together with a specifications sheet. Address The Baker-Lull Corp., 314 W. 90th St., Minneapolis 20, Minn., or take advantage of the Post Card on the colored page in this section. Circle No. 742.

Catalite
REFLECTIVE
COMPOUND

mileage proved

dries in 6 minutes

weather proofed

Catalite
REFLECTIVE
COMPOUND
(Beads and Paint)
PREMIX REFLECTIVE TRAFFIC PAINT AT ITS BEST . .

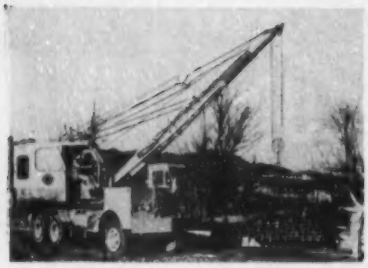
•

EASILY APPLIED
—no bead dispenser necessary

See your nearest CATAPHOTE dealer—or, write

Cataphote
CORPORATION
TOLEDO 10, OHIO

Truck Crane Lifts More, Travels Faster



The Koehring Co. introduces a truck crane version of the improved 205 excavator, designed to lift loads up to 15 tons and travel at a road speed of 32.6 mph. The unit features strong carburized-steel gears, fully enclosed for constant, dirt-free lubrication, and automatic traction brakes.

Koehring's 205 is easily adapted to clamshell, dragline, shovel and hoe work. Straight boom jibs ranging from 15- to 30 feet long, with cable and counterweighted hooks, are available for special high lift crane service. The crane's turntable swings on four adjustable hook rollers, and when used as a shovel, the dipper is tripped electrically.

Truck body of the 205 has 10 forward speeds and two reverse speeds, and is equipped with two outriggers, eight feet in length, adding extra support during stationary lifting operations.

For additional information on the 205 truck crane, write directly to the Koehring Co. Sales Office, 3026 W. Concordia Ave., Milwaukee 16, Wis., or use the Post Card on the colored page in this section. Circle No. 744.

Gate rises when coin is inserted; lowers seven seconds after rear wheels clear treadle. (Remote control from drivers' seat available as optional equipment.)
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- No car jockey or attendants necessary. Coin-activated gates rise automatically when coins are inserted.
- No additional policemen are required. One man can collect from and service as many as 50 parking lots per day.
- Em-Ro gates are easy to install, and entail no complicated service problems. New only in their application to parking lots, these gates have long been used by the railroads for grade-crossing traffic protection. The mechanism is foolproof.

* Can be leased for less than $3.00 per day, per gate —or purchased outright.

Before you change or expand your present parking setup, get complete information about Em-Ro gates. Write, wire or phone now. (24-hour switchboard.)

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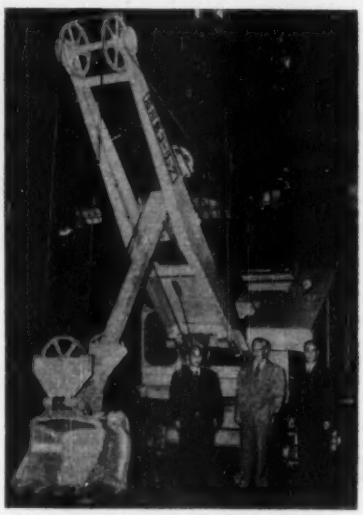

Officials inspecting the first Japanese-made Koehring 205 excavator at recent dedication ceremonies in Yokohama. They are (left to right); Toshiwo Doko, president of Ishikawajima Heavy Industries; J. R. Steelman, president of Koehring Co.; and Hiroyuki Hayashi, general manager of Ishikawajima-Koehring Ltd.

Acts as Ambulance, Mobile Prison & Cruiser

Chief B. L. Garmire of the Eau Claire, Wis., police, calls this new Model R-110 Travelall the "triple threat" of his department. The vehicle is used as an ambulance, mobile prison, and cruiser. Radio-dispatched, it transports patrolmen to and from their beats and, in addition, serves as an emergency conveyance for Eau Claire's dog-catcher.

The black-and-gold Travelall fea-

tures a siren and red running light, wide doors, steps to facilitate access from the rear, and a three-way radio. In the truck compartment are a cot and first-aid cabinet.

The International Harvester Co., Inc.,

180 N. Michigan Ave., Chicago, Ill., makes the Model R-110. Write the company direct, or use the Post Card in this section. Circle No. 746.

Televised Police Line-up Saves Time and Increases Results

A new use of television in police work which may speed the solution of crimes and save detectives thousands of man-hours every year in the identification of suspects, was demonstrated for the first time at Manhattan Police Headquarters, 240 Center St., New York on February 8.

The New York Police Department televised the regular daily line-up of persons arrested for felonies or major misdemeanors. The images were picked up by a small RCA industrial television camera (Model I TV-5) and transmitted over a microwave link, by way of the Empire State Building tower, to Brooklyn police headquarters where a large group of detectives viewed the line-up on TV receivers.

With receivers at all precinct police stations, such a system would make it unnecessary for detectives to leave their precincts every morning and spend time traveling to and from Center Street to view the line-up. Further, it is believed that citizens involved in crimes as witnesses or victims will more readily accept invitations to search the line-up for suspects at their precinct stations than at headquarters. The system could also be used for communicating photographs of suspects to precinct stations, and would enable top police officials to address the entire force simultaneously.

For information about the equipment, write Radio Corp. of America, Camden 2, N. J., or use the Post Card in this section. Circle No. 771.

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Two Lorain Moto-Cranes are used to swing and pour the four Gar-Bro cement buckets in the construction of turbine and generator bases at Sun Valley.

Purchasing

Los Angeles, Calif., Gets New Steam Plant

The Los Angeles Department of Water and Power reports the use of two 45-ton Lorain Moto-Cranes in the construction of this new Sun Valley Steam Plant in Sun Valley, Calif. These cranes handled four 4-yd. cement buckets made by the Gar-Bro Mfg. Co., Los Angeles 21, Calif., while pouring 1,300 cubic yards of concrete for turbine and generator bases.

Made by the Thew Shovel Co., Lorain, Ohio, one crane featured a 70 ft. boom, the other a 50 ft. boom. Two Gar-Bro buckets were used by each crane, with Challenge truck mixers from Cook Brothers Equipment Co., Los Angeles 31, Calif., loading one, while the cranes swung and poured the other.

Transforms Pickup Unit Into Low-Cost Dump Truck

Cities with single-purpose pickup trucks used exclusively for hauling, can convert these units into versatile dump trucks by attaching the new "Universal Mount" Dump-O-Matic hoist. According to Ross Miller, vice-president and general manager of the National Lift Co., the Dump-O-Matic is easily mounted on any ½-, ¾-, and 1-ton pickup chassis and, when compared to unloading by hand, means a considerable reduction in costs.

A single hoist model is quickly adapted to the truck body with a simplified kit of mounting brackets. Twin cylinders of the Dump-O-Matic are slung low between the truck chassis frame, permitting a lift point well ahead of the body hinges, plus greater leverage and easier hoist work.

Each Dump-O-Matic is supplied with hydraulic power by a new fan-belt driven Hydra-Clutch pump, mounted atop the truck engine. This pump draws 1-hp to lift a capacity 6,000-pound load.

Additional information on the Dump-O-Matic is obtainable from the National Lift Co., Customer Service Department, Wayne, Mich. Write directly, or use the Post Card located for your convenience on the colored page in this section. Circle No. 772.

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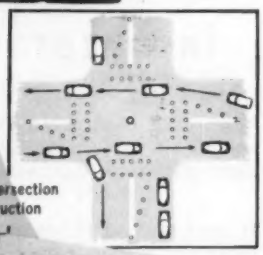

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About People

You know — or — should know

Retiring from his important position as Director of the Division of Sewage Disposal for New York City's Department of Public Works, Richard H. Gould joins **Greeley and Hansen,** Chicago consulting engineers. In the past, Mr. Gould has had charge of engineering the design, construction and operation of all sewage disposal projects in New York City, as well as directing the design and construction of extensive works for incineration of the city's refuse.

Another organization of consulting engineers, **Havens and Emerson** of Cleveland, Ohio, announces the retirement of one, and the admission of two new partners to the firm. Retiring is Frank C. Tolles, who will remain with Havens and Emerson as a consultant. New partners are Frank L. Palocsay and Edward L. Ordway, while Alvin M. Mock and Glen H. Abplanalp have been made principal engineers.

T. Bartow Ford, vice-president in charge of sales for **The Dorr Co.,** Stamford, Conn., informs us of a number of changes in the firm's sales organization, beginning with the appointment of a new assistant sales manager, William E. Smith. Associated with Dorr for the past 30 years, Mr. Smith last served as the firm's manager of North American Industrial Sales, a position recently filled by Glenn O. Wilson. William T. Marston takes over Mr. Wilson's former post as manager of Dorr's Western Industrial Div. in Denver.

W. E. Smith

From James Maskell, former distributor for the **Flexible Sales Corp.,** Los Angeles, Calif., comes word that he will now serve as the Eastern distributor for the **W. H. Stewart Co.,** Syracuse, N. Y. Stewart manufactures a full line of pipe cleaning equipment.

Joseph A. Bogan reports leaving **Bituminous Coal Research, Inc.,** to become director of public relations at the Cleveland Rock Drill Div. of the **Le Roi Co.,** Cleveland, Ohio. According to R. R. Morgan, vice-president of Le Roi, Mr. Bogan is not only a graduate engineer, but as a student of patent law, boasts membership of the Bar of the U. S. Supreme Court.

Following the termination of a number of agency agreements, the **United States Pipe and Foundry Co.,** Birmingham, Ala., has opened three new offices; one in Los Angeles, Calif., and the others in Seattle, Wash., and Syracuse, N. Y., according to Carl N. Brown, the firm's sales manager. Management of the Los Angeles office goes to George J. Bogs, formerly of the Chicago office, with Foster T. Manock remaining as sales representative. In Seattle, the firm's new Northwestern sales agent, Robert N. Park, takes over, while the Syracuse sales office will be under the supervision of J. Perry Emerson. The Syracuse office will serve all of New York State with the exception of Rockland and Westchester Counties, New York City and Long Island. Another U. S. Pipe and Foundry announcement concerns the appointment of Buddy Amis as sales representative in Houston, Texas. L. C. Krusen replaces Mr. Bogs in Chicago.

Bertil E. Engstrom is the new Midwest regional sales manager for the **Darling Valve & Mfg. Co.,** Williamsport, Pa. He will head Darling sales in some 12 states, extending from the east Ohio border to the west border of the Dakotas, down to the southern border of Kentucky.

When Henry H. Howard takes over as vice-president of the **Caterpillar Tractor Co.,** Peoria, Ill., he will have charge of the company's newly created Engine Div., reports Louis B. Neumiller, Caterpillar president. Mr. Howard has been connected with the organization for the past 27 years, serving as general sales manager, director of sales, and recently, as manager of the new division.

H. H. Howard

In an endeavor to place service engineering personnel in key areas throughout the country, the **Simplex Valve and Meter Co.,** Philadelphia, Pa., has appointed two new service engineers; E. M. Logan and J. L. Rainier. With headquarters in St. Petersburg, Fla., Mr. Logan will operate in the states of Florida, Southern Georgia, Southern Alabama, Mississippi and Eastern Louisiana. Mr. Rainier, meanwhile, will locate in Oklahoma City, Okla., and will handle service calls in the states of Oklahoma, Nebraska, Kansas, Texas, New Mexico and Colorado.

A man associated with the **Allis-Chalmers Mfg. Co.** of Milwaukee, Wis., for the past 26 years has been chosen vice-president and general sales manager of the firm's Tractor Div., reports W. A. Roberts, company president. He is William J. Klein, who, until recently, had charge of the Division's Minneapolis branch, which he opened in 1930.

Several important management changes have been announced by **Joseph T. Ryerson & Son, Inc.,** Chicago, Ill. Weaver E. Falberg, former manager of the alloy steel division has been made assistant general manager of sales for all 16 Ryerson steel service plants. In addition, Roland W. Burt, past sales manager of the firm's Chicago office, has been appointed manager of Ryerson's Chicago plant, and will be succeeded as sales manager by Alfred J. Olson.

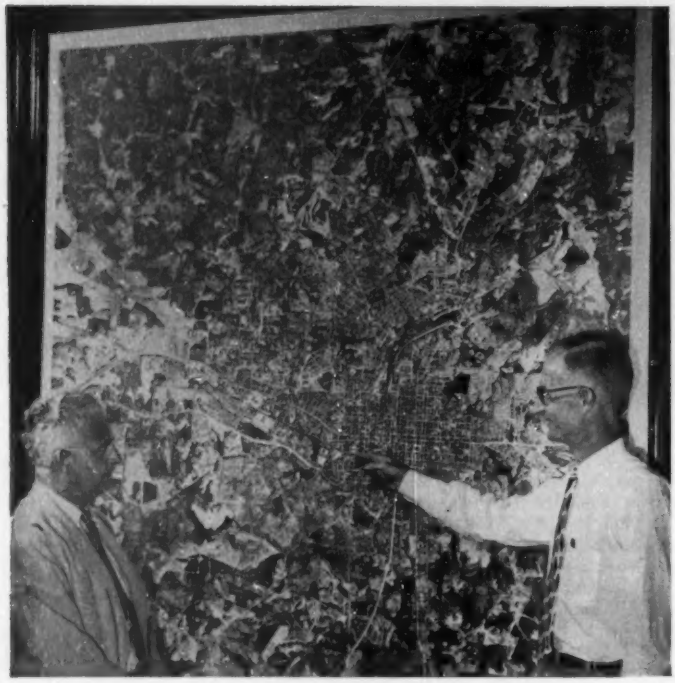
W. E. Falberg

Russell E. Rutan joins the sales force of the **Neptune Meter Co.** of New York City, where he will work with Neptune district representative Michael J. Siebert. Together the men will call on municipal water-works officials in the states of Maryland, Delaware, Virginia and West Virginia.

Robert L. Casselberry will manage product planning and market research of comunications equipment for the new headquarters marketing organization of **General Electric,** Syracuse, N. Y. Lacy W. Goostree, Jr., manager of marketing for communications equipment, also announces the appointment of L. Robert Sheeley as manager of sales; Horace N. McNeill, manager of product service; Theophilus Johnson, Jr., sales manager for carrier equipment; and George H. Floyd, manager of advertising and sales promotion.

W. E. Cleaves, general sales manager for the Bendix Radio Communications Div., **Bendix Aviation Corp.,** Baltimore, Md., informs us that the sale of Bendix mobile radio equipment in Ohio, Western New York State and Western Pennsylvania will be handled by J. William Montgomery, recently appointed communications engineer. Mr. Montgomery has been with the company for the past five years.

Long connected with **E. I. du Pont de Nemours and Co.,** Wilmington, Del., as a consultant on water and industrial waste, Edward B. Showell retired recently, to undertake consulting work in industrial water, and industrial water-waste recovery and disposal. His home address is R. D. No. 1, Chadds Ford, Pa.



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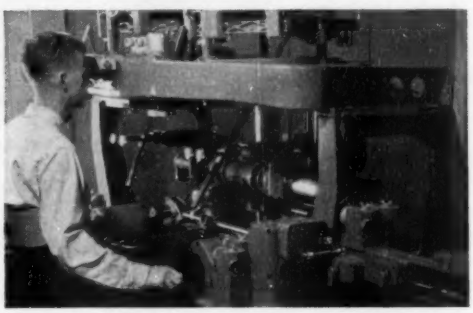

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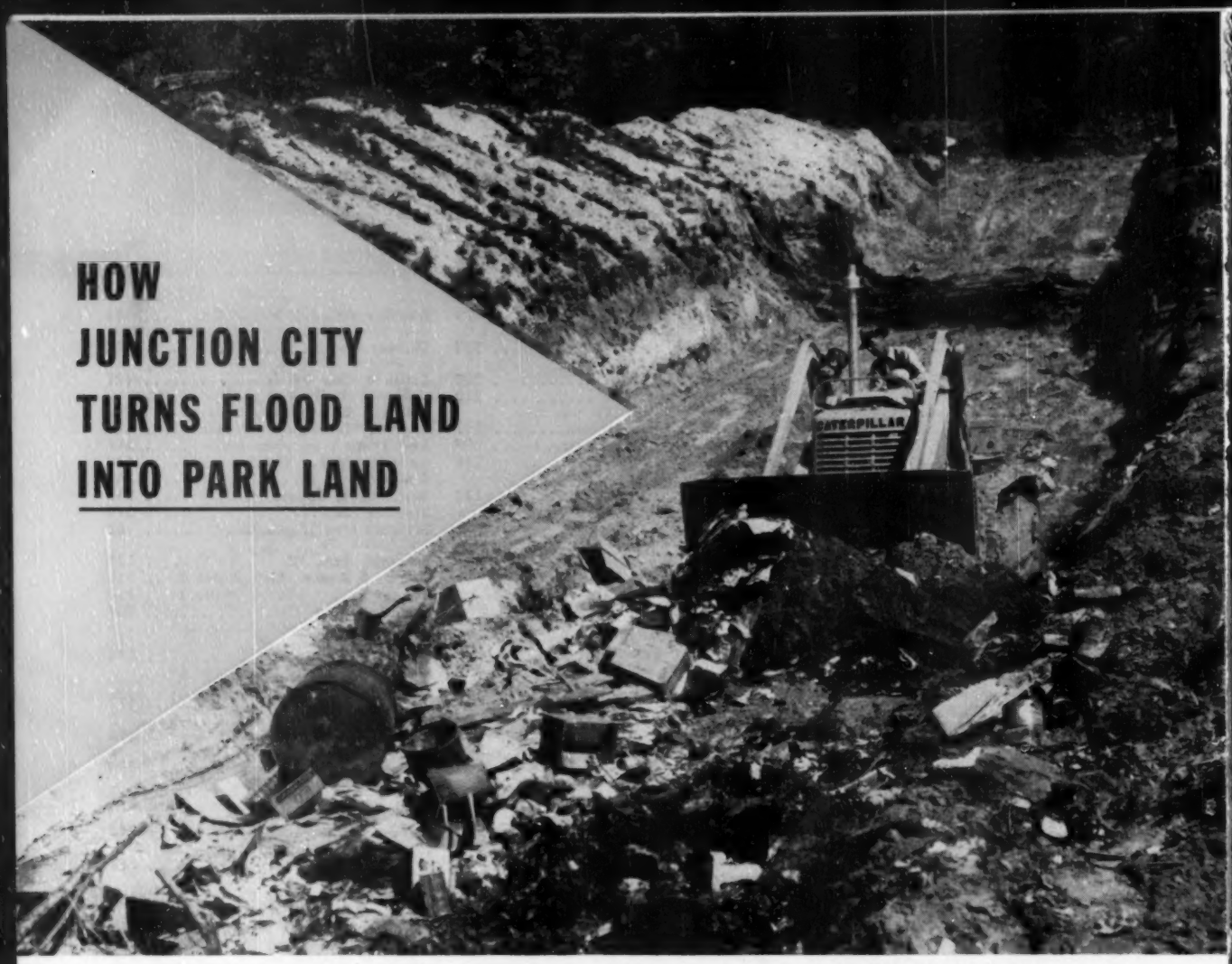

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